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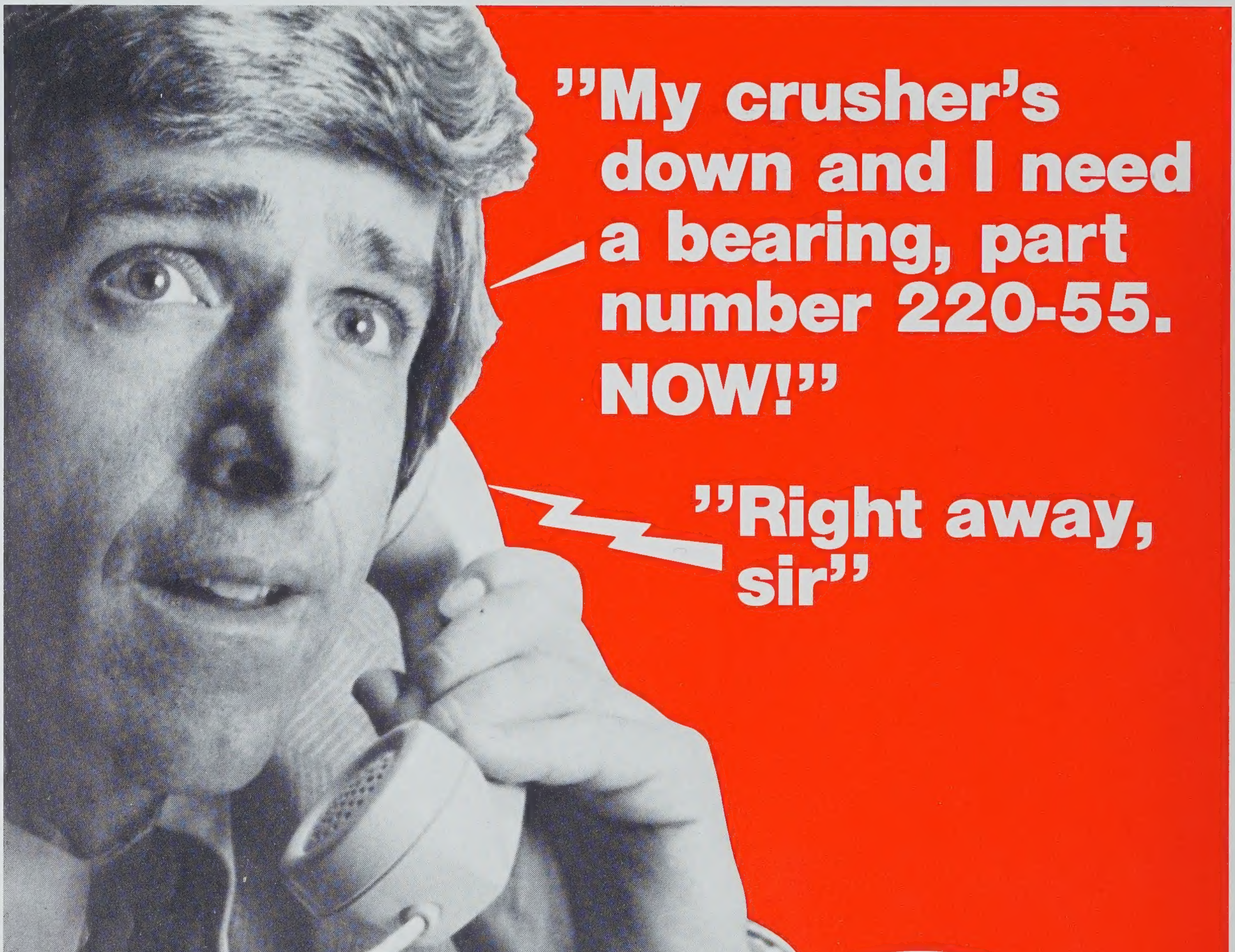
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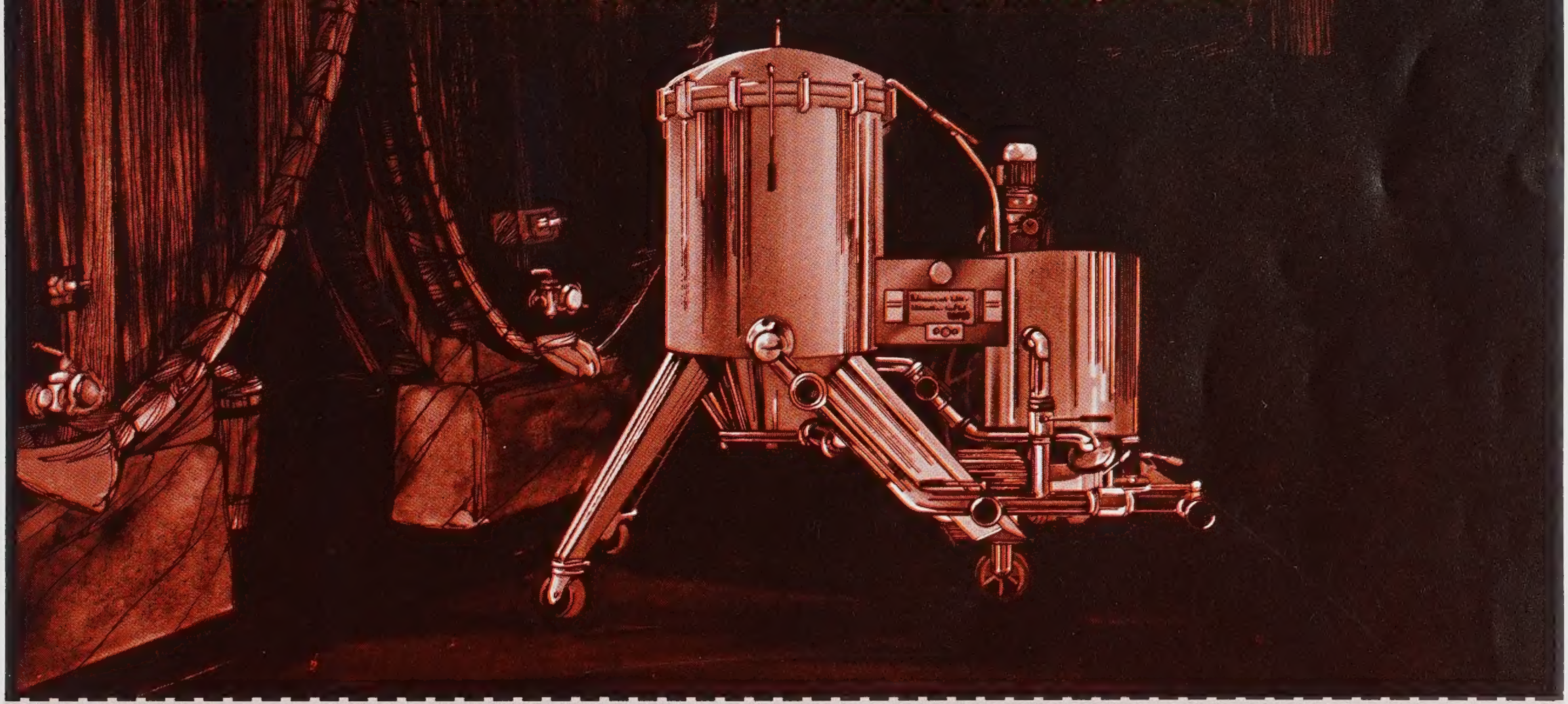

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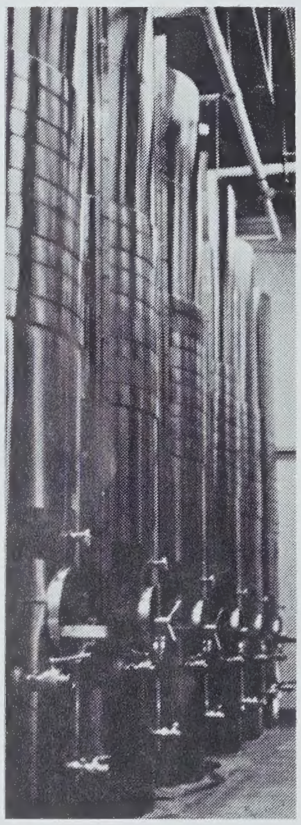

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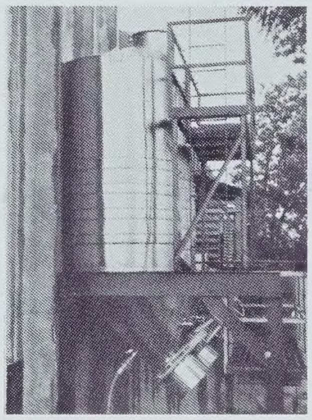

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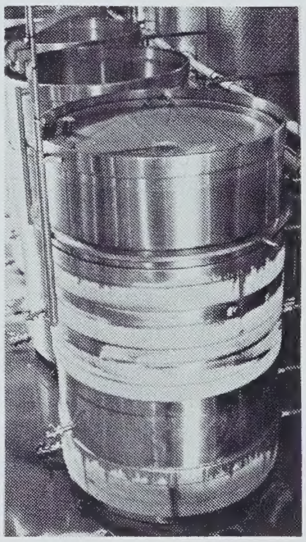

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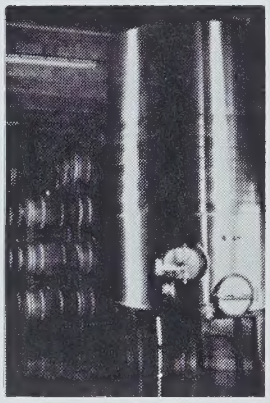

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UP-COMING SEMINARS

WINE TRANSPORTATION

The first International Symposium on Wine Transportation is scheduled for April 17-19, 1984 at the Sheraton Centre Hotel in Montréal, Canada. The event is sponsored by Quebec's Minister of Trade, Commerce & Tourism and is organized by 'La Societe des alcools du Quebec', a provincial government-owned company responsible for distribution of wines and spirits throughout the Quebec territory.

'L'Union Internationale des Oenologues (International Union of Enologists), founded in 1965, and the Office international de la vigne et du vin, which represents over 5,000 winemakers in 46 countries, are supporting this commercial, scientific, and technical event.

The Symposium will bring together winemakers, importers and exporters, distributors, transporters, and experts in maritime law and insurance to discuss the future possibilities and current problems of wine transportation.

"Problems of delays of containerized wine shipments are occasional – but they've been with us for years and they should and can be solved," says Dr. Cornelius Ough, a scheduled speaker from UC Davis. "This is particularly true of routes through the southern U.S. on its way to lucrative east coast markets.

"There has been no real cooperative effort to improve conditions by all those directly concerned with the wine transportation process."

Themes will include: preparation of wine for transportation; reaction of wine to various modes of transport; wine transport by air, rail, road, and sea; legal aspects of transportation, insurance, and claims; and wine conservation from arrival through the distribution channel.

Registration for the Symposium costs $550 (Canadian) and $450 (US). The registration fee includes participation in all sessions and industrial exhibitions, opening cocktail, all breakfasts, a buffet lunch, and a closing dinner. Participants will also receive a final report, containing texts of all lectures and discussions, and other pertinent statistics and material.

To register, contact: C.P. 994 Succursale Desjardins, Montréal, Canada H5B 1C1 (514) 288-4735, (telex: 055-60780-SAQ).

Scheduled speakers are as follows:

Michael Broadbent, England-'A Retrospective History of Wine Transportation'.

Dr. Lamberto Paronetto, *L'Enotecnico*, Italy-'Different Means of Transportation Through Time'.

Prof. Suzanne Brun, Univ. of Montpelier, France-'Toxicology of Substances During Transport of Wines'.

Dr. Helmut Muller-Spath, Germany-'Conservation of Wines Under Inert Atmosphere'.

Prof. Corrado Cantarelli, Univ. of Milan, Italy-'Problems of SO_2 Level in Assuring Wine Quality During Long-Distance Transport'

Prof. Inigo Leal, Spain-'Transport & Biological Stability of Bottled Wine'.

Dr. Jacques Puisais, France-'Wine Fatigue'.

Dr. Jocelyn Tremblay, Canada-'Packaging of Wines & Temperature Conditions During Transport By Containers'.

Ms. Barbara J. Pratt, Sea-Land Service, USA-'New Developments in Transport of Wines By Containers'.

Prof. A. Maujean, Univ. of Reims, France-'Influence of Light on Wine'.

Prof. Gian Francesco Montedoro, Univ. of Perugia, Italy-'Condition, Transport & Stability of Wine Quality'.

Dr. Pasqual Herrera Garcia, Spain-'Conditions

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of Warehousing & Distribution of Wines'.

Bernard Bazot, Air France Airline-'Transport of Wine by Air Cargo'.

Marc Chevalier, France-'Transport of Wine By Tankers'.

L. Vignaud, France-'Transport of Wine by Rail'.

Dr. Cornelius Ough, UC Davis, USA-'Heating of Wine During Shipment'.

Prof. L. Usseglio Tomasset, Exper. Inst. of Enology, Italy-'Influence of Increased Temperature on Wine Quality'.

Dr. Mario Castino, Exper. Inst. of Enology, Italy-'Alterations in Taste & Aroma of Wines During Transport'.

Dr. Casas Lucas, Spain-'Transport of Wine By Air'.

Prof. Emmanuel Du Pontavice, Univ. of Law, Economy, & Social Science, Paris, France.

Sean J. Harrington, Canada-'Legal Problems in Carriage of Alcoholic Beverages in Bulk and in Bottles'.

Marc Nadon, Canada-'Carriage By Water of Containerized & Bulk Cargo'.

Marc De Man, Canada-'Maritime Insurance'.

SHEEP ON VINEYARDS

A seminar on Controlling and Grazing Sheep on Vineyards will be held 10:30 am on Saturday, April 21, 1984 at the vineyard of Mark Turula, 4701 El Roble Road, Ukiah, CA.

The demonstratation by Turula is sponsored by Bob Sessions, Sonoma County farm advisor for viticulture, Bruce Lane, Sonoma County farm advisor for livestock, Rod Shippey, Mendocino County farm advisor for livestock, and Bruce Bearden, Mendocino County farm advisor for viticulture.

Turula will share his three years of experience of running sheep on the vineyard to control ground cover until late Spring when the ground is dry enough for a tractor to get in and disc. For directions to the vineyard, call the Sonoma County Farm Office, (707) 527-2621.

A no-host lunch will be followed by a visit to the nearby Singley Ranch to inspect an 'electric fence' for control of livestock and predators which Rod Shippey helped design and erect.

CUSTOM WINEMAKING

Custom winemaking—what is it, who does it and how do they do it?

Custom winemaking is the crushing and vinification of grapes by a winery for a private account. The winery could be offering full winemaking services or merely leasing space and equipment.

Small wineries use custom winemaking services when their own facilities are too small or under construction. Private label owners and negociants have wine made for them under a custom crushing contract.

Vineyard owners, dissatisfied with grape prices or their relationship with a winery, often crush their fruit and sell their product on the bulk wine market rather than the grape market.

Several wineries base a large part of their economy on winemaking for private accounts. No one really knows just how many tons are crushed and vinified for private accounts each year, but the popularity has grown significantly in the past ten years.

A one-day seminar on custom winemaking is being offered by The Wine School on Saturday, April 28, 1984. Topics for the seminar include history and current practices, including cost analyses by varietal, and a review by vineyard owners familiar with custom crushing and private labels. Also there will be a panel discussion by winery owners and winemakers who engage in custom winemaking and their views on current trends.

Speakers scheduled are: Doug Manning and Patricia Squicciarini, Manning-Squicciarini Winery Services; David Coccetti, Coccetti Winery; James Konrad, Fourreeminette Vineyard; Kerner Rombauer, Rombauer Vineyards; Alan Phillips, Monticello Cellars; Bruce Edwards, Rutherford Hill Winery; Eugenia Keegan, Bouchaine Vineyards; and Kevin Shannon, Vinformation.

The seminar will be held in Napa Valley, CA. Seminar fee is $75.00, including lunch. An advance registration fee of $50.00 will hold a reservation, with the balance due one week prior to the seminar.

For further information, contact: The Wine School, 1200 Oak St., St. Helena, CA 94574 (707) 963-7903; or Manning-Squicciarini Winery Services, 7830 Silverado Trail, Napa, CA 94558 (707) 944-8093.

COOL CLIMATE VITICULTURE & ENOLOGY

An International Symposium on Cool Climate Viticulture and Enology will be held June 25-28, 1984 at the Valley River Inn in Eugene, Oregon.

The Symposium is sponsored by the departments of Food Science & Technology and Horticulture of Oregon State University at Corvallis, Oregon in cooperation with the Oregon Winegrowers Association and Oregon Wine Advisory Board. Wine Expo '84, an equipment and supplies exhibit will be held concurrently.

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The Symposium will focus on both well-established (classical European) and emerging cooler-climate grape growing regions of the world. Symposium speakers from these regions will present original and review information on both viticulture and enology topics.

Advanced registration is $80.00 or $100.00 at the door, not including meals. To register, contact Oregon State University, Dept. of Food Science & Technology, Corvallis, OR 97331.

Speakers are listed below by session and topic.

VITICULTURE: *Vineyard Site Climate and Exposure;* Dr. Richard Smart, New Zealand-'Aspects of climate, vine physiology and wine quality' and Dr. Norbert Becker, Germany-'Site selection for viticulture in cooler climates using local climate information'.

Wine Varieties and Clones; Dr. Helmut Becker, Geisenheim, Germany-'New white grape varieties for cool climate' and Dr. Raymond Bernard, France-'Clonal variability of Pinot Noir in Burgundy and their potential adaptation to other cooler climates'.

Recent Developments In the Wine Industry of Cooler Climate Regions of the United States: Dr. Wade Wolfe, Washington- 'Interior valleys of the Pacific Northwest'; Dave Adelsheim, Oregon-'Coastal valleys of the Pacific Northwest'; Ms. Zelma Long, California-'North coast California'; and Dr. James Gallander, Ohio-'North central and eastern United States'.

Vine Physiology: Dr. Werner Koblet, Switzerland-'Influence of light and temperature on vine performance in cool climates and applications to vineyard management; Dr. Alan Carbonneau, France-'Trellising and canopy management for cool climate viticulture'.

Vine Stress: Dr. Robert Pool, New York-'Managing vineyards to survive low temperatures with some potential varieties for hardiness'; Dr. Mark Kliewer, UC Davis-'Performance of grape vines under wind and water stress conditions'.

ENOLOGY: *Wine Quality;* Dr. Peter Duerr, Switzerland-'Wine quality evaluation', Dr. Rainer Eschenbruch, New Zealand-'Influence of maturity, clonal selection and processing', Dr. Alex Schaeffer, France-'Influence of maturity, clonal selection and processing...Alsace grapes', Dr. Pierre DuPuy, France-'Endeavors to produce quality in the wines of Burgundy: Control of soil, clonal selection, maturity, processing techniques and commercial practices'.

Recent Developments of the Wine Industry in Cooler Climate Regions: Dr. Terry Lee-Australia; Dr. R. Eschenbruch-New Zealand; Ms. Gilliam Pearkes-England; and Drs Gary Strachan and Andrew Reynolds-Canada.

Processing and Fermentation: Dr. Ekkehard Grampp-'Application of enzymes in grape juice and wine processing' and Dr. Friedrich Zimmerman, West Germany-'Application of yeasts in winemaking technology'.

Recent Developments in Processing and Fermentation Research: Dr. David Heatherbell, Oregon-'Application of Ultra-filtration and protease enzymes to grape juice and wine processing'; Dr. Roy Thornton, New Zealand-'Improvement of desirable winemaking characteristics in wine yeasts by hybridization'; Mario Bertuccioli, Italy-'Recent developments in improving the aroma of white wines'.

Acidity & Deacidification: Dr. Roger Boulton, UC Davis-'Acid modification and stabilization'; Dr. T. Lee-'Options for management of malolactic fermentation in red and white table wines'; Barney Watson, Jr., Oregon-'Commercial evaluation of two new Oregon strains of malolactic bacteria'.

The Grape-growing & Winemaking Review
PRACTICAL WINERY

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COVER PHOTO: Zinfandel photographed by Faith Echtermeyer.

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LETTERS TO THE EDITOR

Dear Editor,

In the story *Wineries and Money* (**PW** Jan/Feb 84) the focus is to the largest segment of the wine-processing industry **in terms of number**, the 'super-premium' or 'Chateau' winery. The term 'winery' has many different suggestions, i.e., from the home winemaking operation to the giant 'factories'.

As Mr. Cannon points out, there is a diversity in the wine market and general industry trends can be misleading. For example, there are over 500 bonded wineries in California, yet about 45 of these account for more than about 95% of the wine shipped to consumer channels.

This leaves 450 or so wineries competing for 5% of the market, although this market is markedly different from the higher volume producers.

Sincerely,
Dave Butow
Assistant Vice-President,
Vineyard and Tree Crop Specialist
Crocker National Bank

Dear Editor,

Sources of Reinfection (**PW**, Jan/Feb 84) is very useful in preparation for bottling of sweet wines. I reviewed it with my bottling foreman, and he was able to use it as a guide with his bottling crew.

Fritz Neradt's discussion is a valuable reference document on bottling for any winery.

Sincerely,
Robert Pecota
Robert Pecota Winery

Dear Editor:

My compliments to Robert Beelman for his excellent article "pH = Quality" appearing in the January/February issue of **Practical Winery.** He thoroughly surveys the current literature and gives helpful tips for practical winemaking.

Sincerely,
Phillip E. DeVore

CORRECTION: In PW Jan/Feb 84, in *Coping with Stuck Fermentation* on p. 58 should read "The French tend to feel that **one cannot afford** to just wait and see..."

Sorry—Ed.

FREE RUN

anne murphy

Remember when life was simple and roles were defined? At least some people thought so. The vineyardist answered only to Nature, the winemaker to his loyal following. Growers fought weather, pests and disease, but were welcomed when they delivered their harvest. Wineries fought internal stylistic battles, but depended on their growers. Their joint efforts pleased the eager consumer.

Things never were that simple, but at least growers and wineries both had established certitudes and relatively simple paramaters in which to work. That was before everyone thought the gondola was a bandwagon. Soon vineyard plantings increased dramatically, and mortgage interest rates were reflected in the bottle price.

Wineries dealt with increasing grape prices and too many grape choices, leading to a diversity of styles and perplexed consumers. Market analyists gave predictions that influenced grape prices; competitive tastings affected wine prices. The press stepped in and relished its comprehensive power within the industry.

It all moved too fast, and the primary response in a young, naive industry was chaos. In this edition, **PW** considers today's industry in it's unexpected confusion.

Why bother to vinify a native California varietal that some hardly consider worth purchasing? Several spokesmen emphasize quality and tradition in their discussions of Zinfandel.

Do the currently accepted but negative wine-market predictions make us victims of a self-fulfilling prophecy? **PW's** market analysis looks hopeful, without being completely 'over the rainbow'.

Growers today consider frost conditions, hail predictions, planting trends and economics. Wineries and growers need their combined strength to fight wine-snob backlash, foreign competition and negative market predictions. **PW** presents views from growers who have goals of a healthy, high-quality wine market.

In the future, **PW** will devote appropriate space to significant topics in viticulture as well as enology. We will also consider the timely issues of planting trends and economic indicators. To overlook the economic side is as devastating as ignoring the frost warnings.

The most crucial work now is to continue to build bridges within the industry. Things never really are simple, but to keep them chaotic deprives us all of a chance.

Coming in May/June 1984:

Enzyme Purchasing Guide

Malolactic Bacteria
Cultures & Questions

Pump Purchasing Guide

Riesling: Twelve Wineries
in Six States

VERDICT
from the Cellar

JUDGING

*(Editor's Note: I made the mistake of attending a very prestigious wine tasting with Jake last month. Jake introduced me to Dr. Iggy Calamari. We were discussing Dr. Calamari's work with wine-powered pacemakers when Jake's unique wine tasting methods led to some typically bizarre behavior on his part. I would like to publicly thank Dr. Calamari for his help in this matter and to assure him that **PRACTICAL WINERY** will make good on his generous advance for Jake's bail.)*

By Jake Lorenzo

I've never been fond of medals. Somehow, they don't seem right without a uniform, and people who wear uniforms, especially those festooned with medals, are extremely rare here in the wine country.

Judges wear robes. I guess robes are uniforms, but they would look ridiculous with medals dangling from them.

Judges are authority figures. That's why they can wear robes in the daytime without having people tease the hell out of them. In the wine business, judges don't wear robes, but they are still viewed as figures of authority.

Lacking uniforms, they have the good sense not to wear medals. Unfortunately, instead of wearing them, they spend a great deal of time giving them away.

According to John Parducci of Parducci Winery, Ukiah, CA, "There are so many wineries and so many judgings that they're having a hell of a time finding enough qualified, experienced judges."

I'm not sure what the qualifications are to be a judge at a winetasting, but since I've been invited to several, I view all such judgings with great suspicion.

Personally, I think the whole idea of judgings is ludicrous. Wine was meant to be drunk, usually with food, but nobody drinks at a judging. Go to an official judging and you are likely to be confronted by a table full of Cabernets from five different vintages, 12 different counties, and 92 different wineries.

Faced with this plethora of fine wines, most judges look, smell and then spit out one wine after another. When I participate in judgings, I don't spit. Put 92 Cabernets in front of Jake Lorenzo and I'm going to taste each and every one of them.

When a tasting is over, all the other judges sit in front of their 92 full glasses and their bucket of wine and saliva with red stains on their chins where the wine dribbled. I sit in front of a bunch of empty glasses, my spit bucket dry, my chin clear of all but the morning's stubble. Never mind that my eyes are glazed and my cheeks are red.

Other judges complain about the build-up of tannins on their palates while they tally their points and make their awards. For me, it's simple: the empty glasses are the winners; the ones I didn't finish, are the losers.

Of course, other judges criticize me for a general lack of professionalism, but who would you rather believe—a guy with wine dribbling down his chin or a very happy man with flushed cheeks? Besides, I never met a winemaker who said he went through all the trouble of making wine so that people could just spit it out.

This brings us to the question of validity. Can people, even professional winemakers, make accurate judgements when faced with 50 or even 150 wines?

Ken Brown, winemaker at Zaca Mesa Winery, Los Olivos, CA, put it this way, "For the first 10-12 wines, I think judges can be fair and accurate, but as you taste more and more wines, you are less able to differentiate subtle differences in things like the levels of oak or alcohol."

Michael Martini of Louis M. Martini Winery, St. Helena, CA, feels that wines should not be compared one to the other. "Wines should be judged against a standard or ideal for that varietal, but in a judging situation, as you taste more wines,

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palate fatigue makes it more difficult to appreciate the softer, more drinkable wines."

In light of the difficulties and often questionable results inherent in these judgings, why do wineries participate? I got several interesting answers. Judgings promote wines and educate people about them. Competition builds quality. Winning satisfies the ego. But the bottom line, repeated by every winemaker asked was, "Medals sell wine!"

"Medals sell wine." Here we get to the heart of the matter. The wine business is, first and foremost, a business, and a very expensive, risky one at that.

Proliferation of new wineries along with increased availability of imports has made retail shelves a jungle. Movement of wine sales away from small, service-oriented shops to self-service chain stores only adds to the confusion.

Wineries, feeling the pinch of slowing sales, growing inventories and greatly increased competition are desperate for publicity. They therefore welcome free publicity and attention generated by judgings, because they have all seen consumers clutching lists of medal winners, while deciding which wines to purchase.

Now, I, Jake Lorenzo, am a private eye. I'm not a judge, I don't own a uniform and I've never won any medals. But I think the wine industry is making a big mistake.

Wine is a magical and unique commodity in the food and beverage industry. The very fact that wine judgings generate so much publicity proves that wine has a special attraction. After all, you don't read about milk tastings, and no one seems to care about the pH of the apple they are eating.

But the message that the industry is sending to the consumer through these judgings is that there are winners and losers, that this wine is better than that one. Using this message to bolster sales is short-sighted and in the long run, could prove disastrous.

Comparing wines to determine which is best is absurd, if not impossible, because it denies the very properties that make wine the magical commodity it is.

Wines are not better THAN one another. They are different, one FROM the other. The differences make wine special and help generate the magic.

If the wine industry is to build a solid foundation to support its growth, it would do well to emphasize differences between grape varieties, vintage conditions, appellation and vineyard designations.

If you must compare wines, then celebrate differences between wines made in Napa Valley, Monterey and Mendocino. Rejoice in the differences, don't denigrate one in favor of the other.

Just as every wine has a different taste and texture, each individual palate has certain likes and dislikes. Success for the wine industry lies not in attempting to define the best wine. It resides in helping each consumer to discover those wines he will enjoy the most!

The buying public is starved for information and direction. Emphasize the glorious differences among wines. Describe those differences so the consumer can recognize them. Then let the consumer enjoy the thrill of discovery for himself.

Put the robes on consumers. Give medals for the unique and varied magical properties of the product. Then rest assured that there are enough personal preferences to support all of our individual styles.

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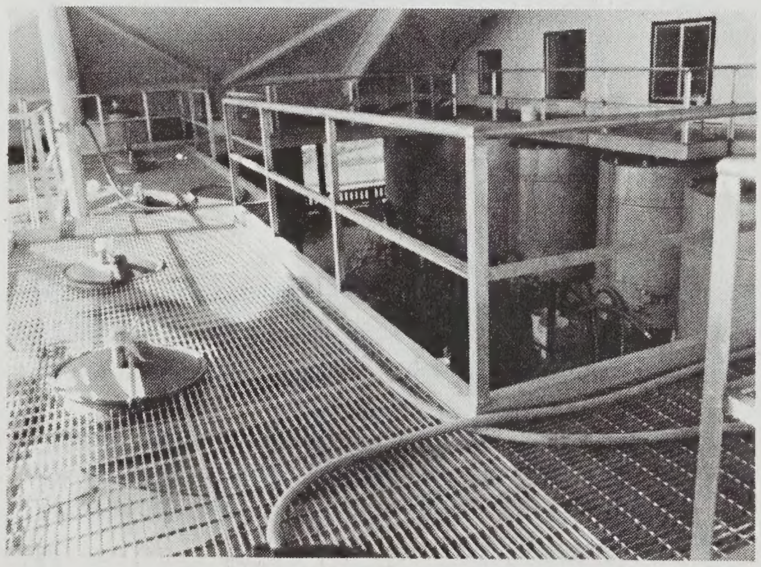

Aluminum catwalk constructed at Acacia Winery, Napa, CA.

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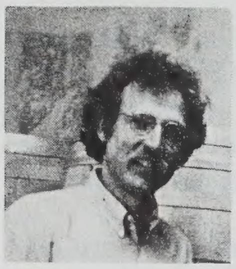


Q's & A's

Quality Approach

By BRUCE RECTOR
Consulting Enologist

Q: *I made a Blanc de Noir and put in my standard 30 ppm SO_2 at bottling, but I can still detect the SO_2 three weeks after bottling. What should have I done, and what should I do now?*

A: At this point, wait another month before releasing the wine to see if the SO_2 will go to a 'fixed' state. However, if the odor has not made a marked decrease within the first three weeks, another month of waiting won't cure it.

You will have to consider decanting the wine and using one of three legal methods to decrease the SO_2 level. The first two, heating and aeration, are not preferred, in that you lose too many desirable aromatics.

The best alternative is to reblend with a low SO_2 wine or a higher pH wine. The high pH wine compensates for what got you into trouble in the first place.

Because Blanc de Noir wines are generally made from immature/low sugar fruit, the juice and subsequent wine pH may be quite low: 2.9-3.1. This low pH affects the equilibrium of the SO_2 or potassium bisulfite that you are adding. The equilibrium thusly changes the amount of the SO_2 which is in the form you can smell.

Equilibrium in this case is something like three fish bowls connected in series by passage ways. (Please excuse my oversimplification of an eloquent discipline of Chemistry.)

If all things are equal, the fish will swim back and forth and although the individuals will change bowls, the number at a given time will be approximately the same in each bowl. This concept will be modified as we go along. We will name the fish bowls that correspond to this equilibrium:

molecular SO_2	bisulfite	sulfite
$H_2O + SO_2$	$H^+ + HSO_3^-$	$H^+ + SO_3^{--}$

All of these forms are the 'free' SO_2 that the Ripper test will titrate. The left-hand bowl is H_2SO_3 or SO_2 with and H_2O, otherwise known as SO_2 aqueous or more fashionably, molecular SO_2.

This is where most of the action is, as far as winemakers are concerned. The molecular SO_2 inhibits microbes and is the form to which we have a physiological response, sneezing and olfactory displeasure.

If a 'fish' jumps out of his bowl, it goes into the gaseous form that we smell. This gassing off is accelerated by heating or aeration. Or the fish can swim to the next bowl which is the bisulfite species, HSO_3^-. Here the direct winemaking benefit is small and if the fish jumps out, it goes into the fixed form or the difference between 'free' and 'total' SO_2.

Substances that most effectively lure the HSO_3^- out of the 'free' equilibrium are aldehydes, then anthocyanins, and to a much smaller degree sugars and other substances. All of these substances complex the SO_2 such that it has very little effect, except when in high concentrations.

These SO_2 complexes are what break apart when you add the 10 ml of 1N NaOH during the Ripper test for total SO_2 and then can be titrated as 'free', giving you the higher number that represents the total.

Can you taste these SO_2 complexes? I think so. The steely flavors in Sauternes are my identification of high total SO_2.

Suppose the fish swims to the right again; it winds up in the sulfite bowl or SO_3^{--} bowl. Here, there is a direct winemaking contribution by sulfite consuming oxygen. The sulfite compete for oxygen with oxidative enzymes, thereby showing (not inhibiting) enzymatic oxidation. If the fish jumps out of the bowl, it oxidizes to sulfate, SO_4^{--}.

Sulfate will not enter back into the free equilibrium, so it does not account for part of the total SO_2. This loss is part of the explanation that the total SO_2 by Ripper does not equal the cumulative total of SO_2 added.

At the beginning, we stated that if all things were equal, like size of the fish bowls, that there would be equal numbers of fish in each of the three bowls. Actually, the amount of fish in each bowl depends on the wine's pH.

If we have 10,000 fish and we size the fish bowl for pH 3.0, then we have 610 fish in the molecular bowl, 9,389 as bisulfite and one fish in the sulfite bowl. If we have a pH of 4, then the count is 60, 9,928 and 12 respectively.

The very significant point is that we have a ten-fold decrease in the molecular SO_2 content going from pH 3 to 4. So, we see how this relates to our bottled wine problem.

If we wait for the molecular SO_2 decrease, what we are counting on is that enough fish will jump out of the bisulfite bowl (being fixed with aldehydes, etc.) and equilibrium will allow the molecular SO_2 fish to swim over to the bisulfite bowl, thereby decreasing the population of the offensive molecular species.

This strategy will only work if there are sufficient amounts of aldehydes and other substances to fix the bisulfite. If there hasn't been a marked decrease within the three weeks after bottling, then we must use the decant and reblend treatment.

The best wine to reblend with would be a low SO_2 wine that has a higher pH, thus effecting the species shift away from the molecular form. However, changing the pH changes several other equilibriums (eg. color and protein), so stability and flavor shoud be checked with lab analyses.

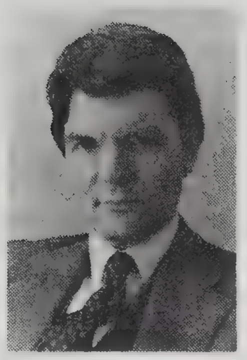
If you are referencing the very fine article *"pH and Wine Quality"* in the January/February **PRACTICAL WINERY,** let me note a few items. On page 41 under figure 4, it states that at pH 3.0, 61% of the free SO_2 is in the molecular form, that should read 6.1%. Also, the sensory threshold for SO_2 is determined by pH. 40 ppm at pH 4 is generally undetectable; at pH 3, it is overwhelming.

Out of principle, if for no other reason, we should keep SO_2 levels as low as possible. Low wine pH is our biggest aid in accomplishing this objective.

Readers: Please keep those cards and letters coming with your recommendation for the flashlight that lasts in your winery.

@ 1984 Bruce H. Rector

Bruce H. Rector is a director of the Napa Valley School of Cellaring which teaches the skills and art of winemaking. He is also an active wine consultant. Send questions to Rector at PO Box 235, Napa, CA 94559, or to PRACTICAL WINERY.



THE WINE LAWYER

By R. CORBIN HOUCHINS

Divorce and the Single Winery

In the September/October 1983 PW, I identified three areas of distribution for discussion: 1) protected sales territories (addressed in that issue and November/December 1983), 2) termination, and 3) selling direct.

Let's define termination as discontinuing sales to a customer who has purchased wine from you for resale to the retail trade. Assume for now that the customer is in a state without special laws pertaining to agreements for distribution of alcoholic beverages.

A System for Decision

Since the relationship with your customer is a contractual one, even if it is only a handshake on a promise to try a few cases and see how it works out, very little can be said about the legal steps in termination without knowledge of what the parties have communicated to one another. It is, however, possible to suggest a system for approaching the issues.

In a previous column I suggested that distribution agreements be in writing if at all possible, recognizing that many distributors do not want to commit themselves in writing and see no incentive to sign agreements or letters of intent with small wineries.

If you are selling without a written agreement, we will have to operate on assumptions about what the oral contract is, which is another way of saying we can make educated guesses at what a court would find the agreement to be after hearing conflicting statements from the parties.

Let us assume for this discussion that every winery which does not actually have a written agreement with a customer who is buying for resale is operating under a contract which provides essentially as follows:

The winery agrees to fill the distributor's reasonable orders, to visit retailers to a reasonable extent, to provide customary freebies and not to do anything in the market that would upset the distributor's sales plan; the distributor agrees to pay for the wine on customary terms and to make customary efforts to sell it to retailers; the agreement is in force until terminated on such notice as is reasonable.

(One shudders to think of doing business in today's market with so many loose ends and 'what if's', but so it often goes.)

Step One

Whether your agreement is written or oral, the first question is why do you want to stop selling? Distinguish between the goal and the facilitating occasion.

For example, failure to pay on time may establish your right to terminate the relationship but doesn't necessarily

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establish a sufficient reason for wanting to do so. Like any other business decision, ending a distribution arrangement should further a specific objective which fits into the overall business plan of your winery.

Thus, put the question of whether your customer can be caught off-base aside and ask what will be achieved by discontinuing sales. If that does not produce a clear answer, there is no point in considering the legal ramifications. If you do have an intelligible goal, assign it as nearly as possible a quantitative value.

Evaluating Distribution Channels

Until you have evaluated the benefit to be achieved by termination, you have nothing against which to weigh the costs. Like all manufacturers, wineries must keep a constant check on costs and benefits of their methods of distribution.

If you have determined that the business costs outweigh the business benefits of selling to customer X, you know that you want to stop selling. Only then are we ready to add the legal factors to the decision process to see what should follow from that desire.

It may be useful at this point to go over some criteria commonly used in evaluating distributors. The following questions are definitely not an exhaustive list. Most should, of course, be asked in the first instance when deciding whether to sell to a given customer, but they are equally relevant to periodic review of the costs and benefits of continuing sales. They are also clues to points that should be covered in a distribution agreement.

1) Does the customer sell effectively? This involves more than just volume and brings up all the in-store merchandising factors we hear so much about at marketing seminars:

Is he selling to the kinds of accounts that are appropriate for your brand?

Is the number of your facings consistent with the sales potential of the product?

Is the shelf position sufficiently prominent and convenient?

If you have a fast-selling white or rose, is it in the cold box?

Does your product get its fair share of floor displays?

Are the shelf strips, point-of-sale, price markings and bottles themselves current, clean and correctly displayed?

2) How frequently does the customer call on the significant accounts?

Does he cover all the significant ones in the market?

Does he follow his customers' preferences on timing sales calls and deliveries?

Breadth of coverage of the market is as important as case volume in the long run.

3) Is the product correctly rotated in your customer's warehouse, the retailer's back room and on the shelves?

Have any quality control problems arisen from the customer's handling of the product?

4) How does the customer rank in the market compared to other suitable customers for your brand, from the standpoints of account coverage, volume and reputation?

5) Are there enough sales people?

Are they knowledgeable about your product and its competitors?

Are they supervised so as to make their effort and expertise available to your brand?

6) Is the customer's management philosophy compatible with yours?

Is he in control of his sales people?

Do you have a large enough share of his mind?

Is his stated commitment to your brand backed up by promotional activities in his market?

7) Are other products sold by the customer compatible with your brand?

8) Is the customer credit-worthy? Is his payment history reassuring?

The Price of Peace

In making your evaluation, be sure to add to the benefits of the status quo a value for avoiding the sales harm caused by disruption of supply during a change of distribution methods.

(That value can vary over a range from minor administrative inconvenience to death of the brand in the market, requiring the next distributor to start from zero or worse.)

Then you must add the benefit of avoiding probable legal consequences of termination, which also vary greatly, both in seriousness and in the degree of accuracy with which they can be predicted.

Let's assume that the distributor you want to stop selling to is doing exactly what he agreed to do in the distribution contract. (Remember, the decision to terminate a business relationship depends not on whether the other party is off-base, but on whether the costs to you of selling to him outweigh the benefits, including the benefit of avoiding any adverse legal consequences of termination. One assumes, of course, that whatever course of action you choose will be consistent with such strictures of friendship, camaraderie and good cheer as may apply.)

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Sayonara Options

Under the above assumption, there is no breach of contract, so options in most cases will be a) waiting until the agreement expires, b) rescinding the agreement by mutual consent or c) exercising a right to stop selling without cause.

Even expiration is not always free of doubt, depending on stated terms in the agreement and the course of dealing of the parties, but it is certainly the easiest course of the three to evaluate. For that reason (and because of special laws in some states), a good distribution contract will ordinarily be for a certain term, irrespective of whether it may be cancelled during that term on occurrence of certain events.

Rescission is often thought of as 'buying back the brand' and turns mainly on bargaining skills and custom in the market. It is also influenced by the degree of certainty that the third option does not exist, since a clear right to stop selling would obviously render the buy-back price academic.

In the case of a customer who has lived up to his part of the distribution agreement, termination without cause depends upon what your obligations under the agreement are:

Is your deal just order by individual order, with no obligation to accept the next one?

Is it to supply product as long as you sell in that market at all?

Is it to keep selling until some specific period for notice of termination expires? May you sell to someone else as well during that time?

The pivotal questions can be answered only after one knows what the contract provides.

If the agreement is in writing, ascertaining its terms is mainly (but not exclusively) a matter of examining the document. If there is no written agreement, you and your legal adviser will have to operate from the best transcript of the bargained-for promises you can construct out of copies of correspondence, order documents and memory.

In our 'standard oral agreement' described above, reasonable notice will depend on the circumstances. It might be as much as a year for a major supplier and would probably be much shorter for a small winery with untried brands.

Ordinarily, uncertainties about the right to terminate sales to a non-defaulting distributor end up factored into the value of a rescission settlement. Settlement terms may include repurchase of the customer's stock on hand and reimbursement for some promotional expenses, but obviously each deal has to be put together according to its particular facts.

Dealing with Black Hats

What if the customer is not 'non-defaulting?' I have seldom encountered a producer unhappy with sales performance in a certain market but satisfied that the distributor is fulfilling terms of the deal.

As a general principle of contract law, the breach by your customer of a material duty to you under a sales agreement relieves you of the obligation to sell to him.

Specific applications of that principle and of exceptions to it are beyond the scope of this column, but I can leave you with one suggestion that should help reduce the costs of vindicating your rights: **Keep detailed records of all dealings with your customers!**

In particular—keep a file of your observations made on visits to the market, covering how your customer is doing on all the points of evaluation listed above and, most importantly, on all his duties under your distribution agreement.

When a customer makes you a wonderful promise, write it down. Confirm it in a letter and keep a copy. When a customer falls short, note that in a letter which asks what he is going to do to rectify the situation and follow it up until you get a response. (If the response is 'get lost,' as least you know where you stand.) In all cases, ask your lawyer to look your file over from the standpoint of document retention policy.

Next issue, I will consider some analytical steps which are useful in nearly all cases of termination for cause and mark a few minefields in the area.

◆

R. Corbin Houchins is a partner in the national liquor law firm, Duryea & Houchins. His column is not intended as legal advice, nor does it necessarily represent views of regulatory agencies on concepts presented. Readers who would like to submit specific questions for discussion in future columns are invited to send them to Houchins in care of PRACTICAL WINERY.

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HEALTHY PROGNOSIS:

Domestic Wine Market to Grow in ’84

By George Schofield

The wine industry has been slow to unravel the backlash effect of the recession. Understandably, the entire industry—from growers to wine merchants—is impatiently waiting for an indication of return of dynamic growth. Some industry experts are now projecting a slow recovery in U.S. wine demand, to be the beginning of a new trend of additional mature growth.

Because of intense foreign competition, the domestic market was essentially flat during the 1982 economic downturn. Despite positive economic growth in 1983, U.S. wine demand has vacillated.

As a result of a 17% decrease in California table wine shipments in January, 1983, first quarter shipments of all U.S. produced wine entering U.S. distribution channels were down 5% below 1982. The 0.5% small gain in the total U.S. wine market in the first quarter of 1983 over 1982 was primarily the result of a 21% increase by foreign wines.

The domestic market for U.S. production did show some significant strength from April through July, increasing at 7% over 1982. Between September and November, a disappointing market softening reappeared, particularly in California table wines, which declined in volume versus 1982.

U.S. Wine Projection
(gallons in millions)

Wine Source	1982	1983 Est. Growth	1983 Total Market	1984 Est. Growth	1984 Total Market	1985 Est. Growth	1985 Total Market
Calif. - Table	273	1.5%	277	7.0%	297	6.0%	315
- Dessert	21	-7.0%	20	-5.0%	19	-5.0%	18
- Sparkling	25	15.0%	29	12.0%	32	12.0%	36
- Other	30	7.0%	32	5.0%	34	4.0%	35
Subtotal Calif. Wines	349	2.4%	358	6.7%	382	5.8%	404
Other States	41	1.0%	41	1.0%	41	1.0%	42
Total U.S. Markets For Domestic Wines	390	2.3%	399	6.1%	423	5.3%	446
Foreign Wines	122	7.0%	130	9.0%	142	8.0%	154
Total U.S. Wines Market	512	3.4%	529	6.8%	565	6.1%	600
Share of U.S. Market	100.0%		100.0%		100.0%		100.0%
California Wines	68.2%		67.6%		67.5%		67.3%
Other States	7.9%		7.7%		7.3%		7.0%
Subtotal Domestic	76.2%		75.3%		74.8%		74.3%
Foreign	23.8%		24.7%		25.2%		25.6%

SOURCE: 1982 data from Wine Institute. All other data from George M. Schofield Data Bank.

Net effect for 1983 will be an increase in the total U.S. wine market of about 3.4%, which is largely attributable to a 7% gain for foreign wines.

The roller coaster U.S. wine market during 1983 has given mixed signals to all concerned with the industry. In past economic recoveries, wine demand surged ahead at an even faster pace. Absence of a timely response now could simply be delayed reaction, or it could mean there is a structural market turning point.

After the 1975 recession, the economy, excluding inflation, experienced real growth of 5% annually. U.S. wine demand initially grew 2.3% in 1976, but then accelerated to 6-8% during 1977-1978. In fact, during 1977 and 1978, domestic shipments of California table wines increased at 14% and 11%, respectively.

Even through the economic slowdown in 1979 and stagnation of the 1980-1981 period, the California table wine category continued to increase 8-11% annually. Only in 1982, well into the recession, did wine demand really fall off. Unfortunately, the tendency towards a lag effect looks possible again during the 1983 economic recovery.

Strong wine demand fundamentals also argue for the resumption of strong growth in wine demand in the U.S. market. Low per capita U.S. consumption—on an absolute basis and relative to other nations—indicates saturation levels considerably beyond the 2.2 Gallons/person in 1982.

Demographic shifts, especially maturing of the relatively large U.S. 20-29 age-group bracket, is likely to be a favorable factor towards increasing wine consumption. Life-style, cultural and consumer changes concerning wine ought to be beneficial to wine demand. The role of wine in fine cuisine and gracious living is a trend which seems to be developing steadily.

Continuation of slow deregulation of restrictive state legislation is also expected to be a positive factor. Liberalizing state monopoly retail practices and, particularly, removal of prohibition of wine sales in supermarkets have certainly been developments in the right direction.

Even if only one large state, such as Pennsylvania, continued this trend in the next year or two, the result could have a significant impact.

The collective underlying strength from all such factors leads to the conclusion that U.S. wine demand is likely to recover over the next two years. Given time, and perhaps some stimulation, recovery will be at least in parallel with the economy.

In a certain respect, the U.S. wine industry is a hypochondriac. Certainly, the industry has not been immune to the effects of rising unemployment, high interest rates, and foreign competition.

However, to put the clamor of complaints in proper perspective, many other industries have experienced significant volume declines during recessionary periods while the U.S. wine markets merely dropped to a level of minimum positive growth.

Moreover, the strong underlying wine demand fundamentals are certainly much more auspicious than the basics in many other markets.

Real Gross National Production
& U.S. Wine Market Growth
(% Growth Over Prior Year)

	Real G.N.P.	All All Wines	California Table Wines
1973	5.8%	3.1%	12.0%
1974	−0.6%	0.6%	9.7%
1975	−1.2%	5.3%	12.7%
1976	5.4%	2.3%	5.1%
1977	5.5%	6.5%	14.4%
1978	5.0%	8.4%	11.3%
1979	2.8%	2.2%	9.8%
1980	−0.3%	7.9%	11.3%
1981	2.6%	5.4%	8.2%
1982	−1.9%	1.3%	1.6%
1983 Est.	3.4%	3.4%	1.5%
1984	5.0%	6.8%	7.0%
1985	3.0%	6.1%	6.0%
1986	0.7%	3.1%	3.0%

SOURCES: Historic G.N.P. - Economic Indicators, November 1983, U.S. Gov't Printing Office
Historic Wine Data - Wine Institute
Projections - George M. Schofield Data Bank

Historical indications of a lag syndrome and the latent structure in the U.S. wine market argues for the resumption of strong growth in wine demand. Prognosis for the U.S. economy is continued real growth of about 5% through the 1984 election year and well into 1985. Some economic weakness may develop in mid or late 1985 with another slowdown occurring perhaps in early 1986.

Based on this scenario, total U.S. wine demand is forecast to increase by 6.8% in 1984 and 6.1% in 1985, as compared to only an estimated 3.4% gain in 1982. On a volume basis, shipments of all wines into U.S. distribution channels are projected to reach the 600 million Gallon level by 1985 versus an estimated 529 million Gallons for 1983.

The market for California-produced table wines, which comprises over 50% of the total market, is expected to grow at 7% in 1984 and 6% in 1985, a pace moderately ahead of the rate of real economic growth.

The high-quality, moderately-priced, predominately varietal California table wines which represent only a relatively small sector of the market, should increase at a significantly higher rate. California sparkling wines may approach 12%.

Foreign wines should continue to benefit from various forms of subsidies and a weak dollar. The 9% and 8% growth projected for 1984 and 1985 is about 2% higher than the California table wine category and almost 3% higher than for all domestic wines. As a result, foreign wine penetration of the U.S. market is forecasted to increase from a 23.8% share in 1982 to 25.6% by 1985.

Even if only one state continues deregulation . . . the result could have a significant impact.

Much criticism has been raised about unfair foreign competition. The practicalities and reality of the situation are that U.S. vintners have to rely on their own ingenuity to prevail over foreign producers. The battleground is not only prices, but quality and the market's recognition of that quality.

In international competition, quality of certain California wines has proven to be world-class. Standards of even some California generic wines have surpassed the *vin ordinaire* of Europe.

But awareness and recognition of these achievements is not fully understood in the marketplace. As a result, the U.S. vintners, from both a viticulture and enology viewpoint, must strive even harder for a more distinctive quality edge.

The marketing and communicative talents of the U.S. wine industry must also be coordinated and applied to the task of gaining superior product recognition. If the industry simply waits for equitable treatment through governmental regulations, an even greater loss of wine market share is likely to occur.

In a certain respect the U.S. wine industry is a hypochondriac.

The relatively small California dessert wine market may experience continued slow decline, while markets for U.S. wines produced in states other than California is projected to be flat overall.

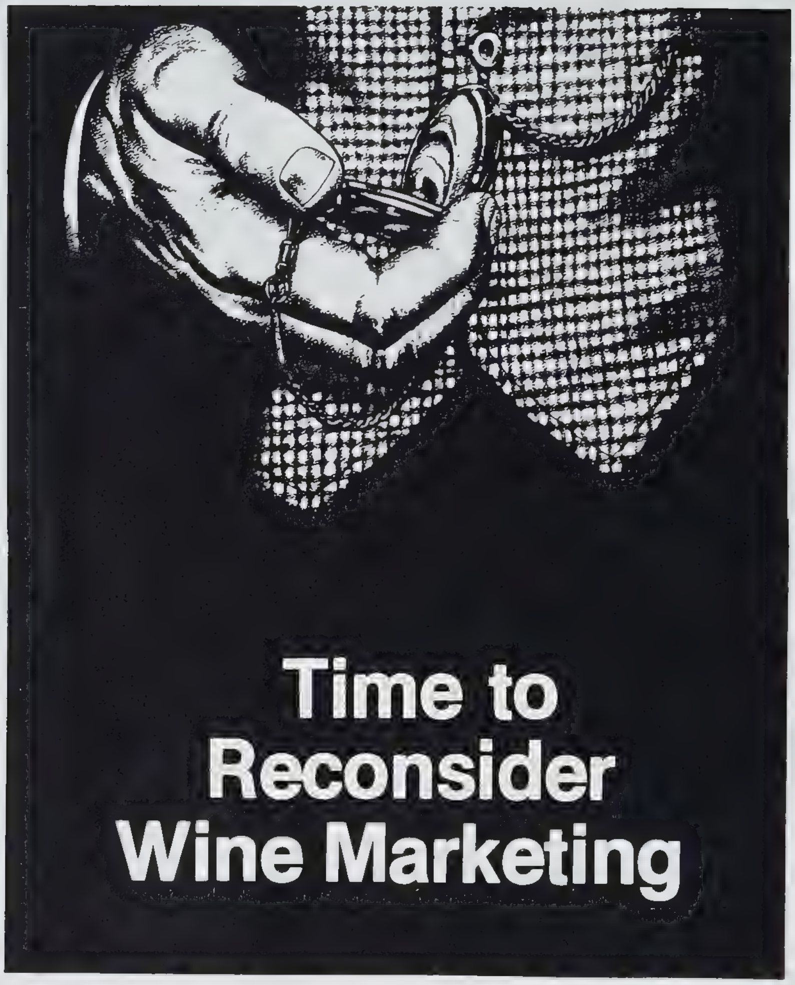
Some strength should be seen in sparkling wines and in table wines made from vinifera grapes from other states, but both of these categories are not significant enough to have any overall impact.

Despite some recent disappointing results, the U.S. wine market is in relatively good shape. Wine demand has again proved it is not impervious to national economic developments. The tendency has been to view cyclical peaks and troughs as good or terrible, and to presume that they have established a new trend which will last forever.

In 1980, when U.S. wine demand grew at 7.9% – in the face of a negative economy – it was optimistic to expect such a level of expansion to continue. Similarly, it is pessimistic to project the low rates of growth of 1982 and 1983 into the next few years. The expanding economy, and strong underlying wine demand fundamentals, connote that the U.S. wine market is poised for a strong recovery.

However, no one in the U.S. wine industry ought to wait for the potential to occur automatically. Positive programs aimed at creating new demand rather than stealing market share ought to be developed.

Research projects should be planned and funded on a joint basis to assure further quality improvements. With such a series of programs, the outlined market predictions may well prove to be conservative and the foreign market penetration exaggerated. Hopefully, this will be the case.



Time to Reconsider Wine Marketing

by Michael Cliff

Proper planning is critical to success of the wine industry, as the recent wine glut so rudely reminded those responsible for the bottom line. The wine boom in America has come to an end and U.S. consumption of wine has slowed considerably.

Anyone involved in production and marketing of wine has to understand the reasons behind that slowdown in order to plan for and meet future demand. Such analysis includes an understanding of barriers which exist today in increased consumption. It is only through such insight that we can prepare to overcome these obstacles.

First, we have to react to variations in consumption patterns in our vineyards, where it takes four years for vines to reach full production. Second, we must plan for changes in consumption at our wineries. And third, we have to plan for these changes in consumption in our sales and marketing departments.

A major part of this planning process is identifying causes and effects of wine consumption. Why do people drink wine rather than milk or soda? 160 million adults in the U.S. – some 40% of the population – do not drink wine at all. 80% of all wine consumed in this country is drunk by 20% of the population, and 1/2 of all wine consumed is drunk by 5% of the population.

Therefore it is important to identify the barriers to consumption of wine. The Seagram Wine Company has identified these barriers using the acronym RAIL – which stands for ***religion, attitude, inconvenience and legal***.

RELIGION certainly is not a barrier that we would like to overcome. We respect an individual's right to abstain from wine consumption on religious grounds.

ATTITUDE must be differentiated between the consumer and the trade. However, both have developed an attitude to the wine industry which has become a deterrent, a barrier to consumption.

We have become our own worst enemies, and have built the mystique of wine into such an elaborate edifice that many consumers are frightened away.

We talk about pH and Brix and clones and temperature of fermentation and the quantity and quality of the grapes in blends. We talk about centrifuging solids, and debate which wine with which food.

But, we are part of the 5% who consume 50% of all wine. Much of the remaining adult population is intimidated. They are afraid of mis-pronouncing a name in public – in a store or restaurant. They are intimidated by the supercilious attitudes of some wine waiters or sommeliers.

Eating out has become an American way of life. One of every three meals today is eaten in a restaurant, and soothsayers say that shortly it will be one of every two meals that Americans will eat away from their homes.

Restaurateurs are, de facto, their educators. From them, consumers receive a large amount of information that they use to judge their dining experience – an event judged by quality of the food, the ambience, **and increasingly** by service of wine.

We have become our own worst enemies.

This educational base, which should so naturally lead to the increased enjoyment of wine by a growing number of consumers, is too often thwarted.

Kevin Zraly, first sommelier at Windows on the World Restuarant in New York City and now a leading restaurant consultant with Vista International, has some very cogent statements about wine service in restaurants. The ideas have all been thoroughly tested at Windows on the World, which sells 10,000 bottles of wine/month.

Wine is one of the few things in a restaurant that does not need processing. It doesn't need to be sliced, chopped, cooked, or carved. Frequently, it doesn't even employ extra labor. Yet restaurateurs use it often as the profit work-horse to make-up deficits from other areas, or as the single sustaining profit factor.

Windows on the World maintains a 500 wine 'long list' and a 125 wine 'short list'. "Quite frankly, of these 500 wines we **really sell**, about 20," says Zraly. Some of the 500 are necessary for prestige and an enhanced image of the restaurant.

Too often, a restaurant loads up on the unknown, esoteric or elite wine, to the exclusion of popular wines, which are more familiar to the average consumer. (A distributor salesman was told recently by a restaurateur that he wanted unknown wines so that he could mark them up 300% and even 400% without his patrons being aware of being gouged.)

The highest volume of wine sold in a restaurant is sold at the midway price. Thus, mid-priced wines should equal 60% of the list's volume, with 20% of the list on the high side and 20% on the low side.

In fact, most restaurateurs go for one or the other extreme— usually the high extreme. Average wine sale at Windows on the World (a celebratory restaurant) equals $18.00/bottle. The normal 'week-in, week-out' restaurant should average wine sales of $12.00-$15.00/bottle.

Zraly developed a progressive pricing system in which lower priced wines have the highest mark-up. Then, as wholesale price/bottle increases, mark-up percentages decrease. For example, a bottle which sells for $2.00 at wholesale would be marked up 250% to $7.00, whereas a $10.00 wholesale bottle would be priced at $21.00, or 110%, i.e.: on an over 100% diminishing scale. The percentages start to decline, for example: $20.00 bottle at $35.00, a $40.00 bottle at $65.00, etc.

While the restaurateur will be making a lesser percentage on the most expensive bottles, he is generating more dollar volume as more consumers recognize value, and try new and different wines.

Restaurant personnel must be well-trained. Without being redundant, restaurateurs can choose from a vast array of competent educators, both paid and gratis. The gratis category includes distributor salesmen with infinite wine knowledge who are ready to share it. In addition, wine articles and publications efficiently and painlessly inform employees.

Regarding the barrier of attitude, there are some trends prevalent in America which also have impacted wine growth. First of all, there is the increasing emphasis in America on fitness and health. Second, concern about alcoholism is increasing. Finally, there is mounting pressure against drunk driving.

These are very real and serious concerns, and ones that we, as an industry, should address responsibly. ***But I am not advocating more consumption by existing consumers. I am seeking ways to encourage the 160 million who never drink wine to begin.***

INCONVENIENCE abounds in both packaging and purchasing. Current research has identified these as very real barriers to consumption. Most wine in today's marketplace is less easily consumed and less portable than either soft drinks or beer. Ironically, most wine packaging enhances the mystique by limiting casual wine consumption.

Certainly there are cans of wine available today, but these are limited to only a very few labels. In general, most wine necessitates the availability of a glass, most 750's require a corkscrew, and larger sizes—from 1.5 litre up—are unwieldy. This may sound sacrilegious, but to many, these are real barriers.

Wines and spirits are distributed in a more limited fashion in many states than beer and other commercial beverages. Some states do not permit wine to be sold in food stores. Counties in some states prohibit sales in restaurants, and there are control states where wine sales are a state government monopoly.

We have made wine intimidating to consumers.

I do not wish to 'rail' against the democratic right of each state to develop its own laws for the distribution and consumption of beverage alcohol. But these inconvenience factors **do** affect wine consumption.

LEGAL is the final segment of the **RAIL** acronym. State and county laws impact both the inconvenience and the legal barriers. Aside from the laws affecting distribution, other regulations inhibit marketing.

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I am seeking ways to encourage the 160 million Americans who never drink wine to begin.

state, we cannot use wood in our point-of-sale, therefore barrels are forbidden. In others, we are not permitted to offer consumers champagne glasses with champagnes. In this same state, there is controversy over coupons for the consumer.

As marketers we are severely handicapped in our ability to communicate with the broad base of American consumers about our products. How do we return wine to the 'boom' era we all anticipated?

We can be more innovative in our packaging, creating new sizes, styles and materials more attuned to the casual American lifestyle.

The industry could develop a generic educational campaign: to expand uses and usage occasions, to promote wine as a beverage to be enjoyed both with and without food, to move wine away from its close association with alcohol and spirits, and to re-position it more similarly to beer and soft drinks. In short, to make wine less intimidating.

Retailers and restaurateurs could spend more time and effort training staff—educating sommeliers, get people behind the retail counter to learn about their products and assist a timid customer.

America consists of two major wine markets, the elite and the popular. The elite is tiny and expensive, and consists of products with specific characteristics. The popular market is large and inexpensive, and consists of products with general, or generic, characteristics.

Unfortunately, we have been using the same methods of communication to address these two very different consumer groups. It appears that the elite market is in far better shape than the popular market. It has an astounding network of communicators. Consider 500 wine writers, 30 consumer wine magazines and newsletters, 1,000 educators, 25,000 wine students per annum, a slew of fairs, festivals and competitions, and almost 1,000 elite or boutique wineries in the U.S., each with their own communications network.

However, for continued growth, this segment of the market must attract new consumers. And, it can only attract them from the ranks of existing wine drinkers.

We are not adding new consumers simply because we focus our attention on the more mature markets rather that trailblazing new ones, and, we concentrate our efforts on the 5% who already drink 50% rather than on the 95% who now only drink the other 50%. In short, we are our own worst enemies.

The ideal is to make wine a part of our daily lives, as it is in Western Europe. It should be more casual, and complement any meal, not just a special dinner. It should be considered not just for food, but to be consumed any time, as an enjoyable and refreshing beverage.

We have upgraded wine too much. We have made it intimidating to consumers—consumers who don't know how to read a label, who are unsure of the proper etiquette for tasting wine in a restaurant or serving it at home, and who are unfamiliar with the paraphernalia and trappings of wine.

The pleasures of wine can and should be shared by everyone, not just a small elite. The next time you refer to pH or Brix or secondary fermentation, consider your audience. You may be alienating a future consumer, rather than bringing him into the fold.

Based on a talk given at the California Wine Festival, Monterey, CA, November 1983. Cliff is currently Vice President, Director of Business Development for Seagram International.

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VINIFICATION of ZINFANDEL at RIDGE

By Don Neel

PW *visited Paul Draper at Ridge Vineyards, Cupertino, CA, to discuss the Zinfandels that have established the reputation of Draper and Ridge Vineyards.*

DN: How did you happen to become a winemaker?

PD: I majored in Philosophy at Stanford University in California. After completing my degree, I worked in Europe, though not in the wine industry, for about four years, first in northern Italy and then in France.

A number of friends were in the wine business so I spent much of my free time, particularly during harvest, in wineries. I had no intention of becoming a winemaker, but that experience in Europe definitely interested me.

I had never made wine at home, but I grew up on a farm. It was an intriguing idea to be able to take something from the earth, carry it a step further through artisan ability, and make of it as sophisticated and complex a thing as fine wine—and to have that also be something that would give pleasure.

I read French and studied the works of Bordeaux oenologists. Many of these books were from the late 19th century and contained very detailed descriptions of methods and how they affected wine quality.

During further travels abroad, Fritz Maytag (owner of York Creek Vineyard) and I set up a foundation in South America to work in a number of areas, including agricultural development. This led to becoming winemaker for a vineyard and winery we leased in Chile for three years. We produced Cabernet Sauvignon from mountain vineyards in the coast range, similar to Ridge, using traditional techniques.

The economic situation in Chile forced our closing down the business, and in 1969 I returned to California and joined Ridge as winemaker.

DN: Could you give a little of the Ridge production history?

PD: Ridge started as an estate Cabernet Sauvignon producer in 1962. In 1964, Ridge first crushed Zinfandel grapes from two to four acres of reclaimed vines in the Picchetti Vineyard, here on Monte Bello Ridge. We harvested reclaimed Zinfandel vines in the Jimsomare Vineyard (also here on Monte Bello Ridge) in 1967.

In the 60's, Ridge produced primarily Cabernet Sauvignon. In the 70's, Zinfandel dominated production, and Cabernet Sauvignon has equalled Zinfandel production in the 80's.

Ridge would have bought Cabernet Sauvignon grapes if a great deal had been planted throughout the cooler, low production areas of California. By that I mean hillside vineyards in central and north-coast counties. But Zinfandel was planted there and Zinfandel grapes from older vines can be very high quality, producing wines intense and rich in varietal character.

It is amusing that Zinfandel is not listed as a 'premium' varietal. Wines made from the best Zinfandel are of higher quality in every way than most any California Pinot Noir, which is considered to be a premium varietal! I would go so far as to say that the best Zinfandels produced in a given year are better wine than 80% of the Cabernets produced in California the same year.

We have four nationally distributed Zinfandel vineyard labels. Ridge's first harvest from the Geyserville Vineyards in the Alexander Valley of Sonoma County, was 1966. First crush of grapes from the Dusi Ranch, Paso Robles, was 1967. We began buying grapes from Amador County in 1974. Our first crush from the York Creek Vineyard on Spring Mountain in Napa Valley was in 1975.

There are smaller vineyards in at least six more areas in Amador, Napa, San Luis Obispo, and Sonoma counties that we have tried and/or are working with.

DN: You made a white Zinfandel in 1982 by drawing off juice from the crusher from several vineyards. What are the residual sugar and acid levels of these wines? What is the oak ageing procedure? What is the picking criteria for White Zinfandel?

PD: Due to tank and time requirements to make this wine, we are seriously reconsidering whether to continue to make the wine. We made about 12,000 Gallons in 1982 and 15,000 Gallons in '83.

A majority of the the '83 grapes were picked at around 21° Brix, and juice was added from some riper grapes to add more flavor. The wine has a final pH of 3.15, acid of 0.8 and a 1.2% RS.

In making the wine, we have bentonite-fined the juice with 2-2 1/2 lbs/1,000 G before primary fermentation. In 1983, we experimented with one 2,300 Gallon lot and found it to be protein-stable after fermentation, requiring no bentonite. In the future we will check for protein stability afer fermentation and only add bentonite if necessary.

In 1982 we used 3% liquid Steinberg culture, and in '83 we used active-dry Champagne. Steinberg really contributes to the nose while Champagne really contributes to the body and flavor, we will probably use a combination in the future.

6% of the blend is a mutee, to add some fresh fruit character and is blended in four weeks before bottling. We added 40 ppm SO_2 after fermentation when we did a rough filtration. 20% of the blend saw new oak barrels for 30 days.

DN: Why are you making individual vineyard lots from all over northern California?

PD: The Europeans, at least with their finest wines, still have a situation where each vineyard produces a distinct wine due to the soil, location, and climate. One reason we keep our vineyards separate is that the grapes themselves seem to have a different character when made into wine.

DN: Do you think that people understand that Zinfandel

is a much more difficult grape to deal with than Cabernet Sauvignon – both from the growers' and winemakers' standpoint? Can you describe the difficulty?

PD: It is more difficult to judge ripeness because of the 2nd crop fruit. If a vineyard is overcropped, you might not be able to achieve desired color. Many other winemakers have told me Zinfandel is difficult, but I haven't thought of Zinfandel as more difficult, it just demands a different approach.

DN: How can you control vineyards you do not own, in reference to overcropping, etc.?

PD: It is very difficult. Some growers strive for quality, and we attempt to pay top prices for high quality. There are high quality grapes in some valley floor vineyards, but it is easier to hold down yields with a grower who has a vineyard in the hills, and therefore has, in general, poor shallow soils, with little or no water for irrigation.

He cannot increase production, so his grapes are going to be more of the type that we want. The grower can prune the vines so they overproduce one year, but the vines will suffer the next year, so what he gains one year, he loses the next. It works out with the hill vineyards almost automatically.

DN: What do you look for when visiting the vineyards?

PD: Before visiting a vineyard, we try to get a feeling for the past production history from the area and/or vineyard. We look at the climate, preferably Region II or at the warmest, Region III. We look at past yields, age of the vines – not just age to hold down yields, but as an indication in good and lean times, that the vineyard was well maintained and therefore is in at least a fairly suitable location.

DN: What is an ideal growing season for Zinfandel?

PD: A warm year in a cool region or a cool year in a warm region with a dry fall. Steady, but not excessive, heat throughout the growing season is preferred.

DN: What do you think is the proper size for Zinfandel berries?

PD: Since Zinfandel berries are considerably larger than Cabernet (which normally could mean less color and tannin than Cabernet), we prefer vineyards that produce moderate size berries. Cabernet-size berries would be ideal!

DN: What do you consider acceptable pruning techniques for Zinfandel?

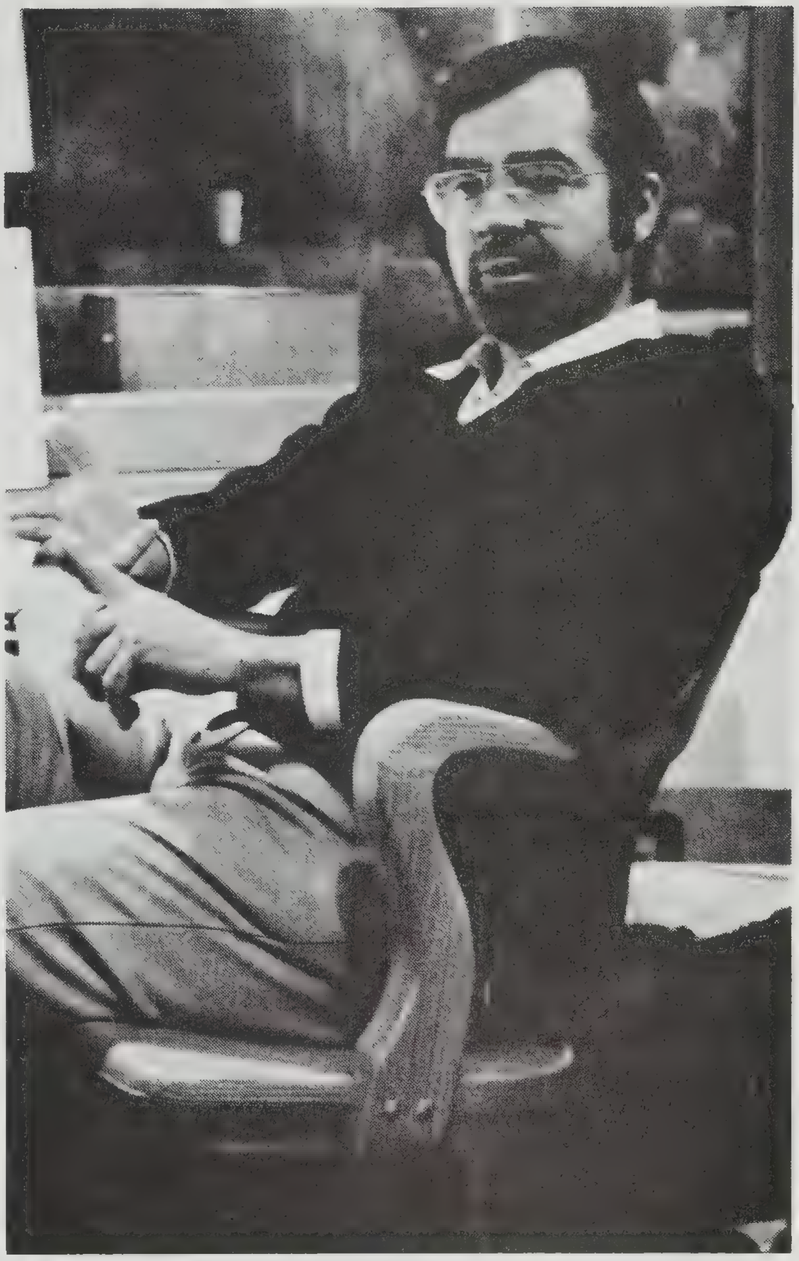
PD: Virtually all of the vineyards we buy from are head-pruned.

DN: What about the second crop, common with Zinfandel? How do you handle that factor? Can that contribute to high acidity?

PD: Second crop is always a potential issue. In years of reasonable ripeness, second crop is not much of a factor. We can include 15-20% second crop, which will contribute to acidity. In a year with a large second crop, we would try not to pick any, knowing a little will get through.

DN: What is acceptable ripening or maturity to you?

PD: Ideally, the vine should begin to die back when we pick, but that often will give over-ripe grapes. So instead, we want to achieve a **true** sugar between 22-24° Brix. In cool years, some blocks come in at 21.5°, and over 24° in warm years. We like acid-sugar ratios (prior to malolactic fermentation) of 3.35-3.45 pH.



DN: Your typical harvest is 5-6 weeks long from about September 15 to October 25. Do picking schedules ever conflict, and what compromises do you have to make? You often have a four-hour or longer truck drive from the vineyard to the winery, does this affect time of day of picking and your average SO_2 addition of 25 ppm at the crusher?

PD: We have two semi-trucks with our own bins capable of carrying 18 tons of fruit. Usually one truck is on the road every day, sometimes both trucks. We ask pickers to start early and finish by 12-1 pm. In warm years and when a change in the weather threatens for the worse, we will give schedule priority to the finest vineyards, and closely schedule the smaller vineyards. We have fermenting capacity for only about 1/3 of our current crush load, thereby each fermenter is used about three times/season.

DN: Have you ever encountered grapes with high sugar and high acid from any old vineyards? If so how do you handle that and do you have any idea why it happens? Have you ever done acid additions to Zinfandel, if so when, and with what?

PD: Yes, a cool region in a warm year with cold nights could produce high acid with good sugar. If the berries have begun to shrivel, you are loosing water while concentrating acid and sugar. Yes, we will adjust the acidity, if needed, with tartaric in the fermenter as early as possible.

DN: Why do you add Petite Sirah to Zinfandel?

PD: Petite Sirah has more tannin than Zinfandel. Petite Sirah adds an element of complexity, a pepperyness, a spicyness which is different, more intense. Petite Sirah adds a color element which helps stabilize the color in Zinfandel.

I started adding Petite Sirah in 1970. In the late 70's, I visited France and took some Ridge samples. The winemakers there preferred the wines with Petite Sirah added. After that, I added up to 5% Petite Sirah to almost all of the lots, to add more complexity.

We did get some Petite Sirah from San Luis Obispo county up until 1981. We receive an average of 50 tons/year from three blocks in York Creek Vineyard: Devil's Hill, Lake, and Dynamite Hill. Most Petite Sirah blended into other vineyard bottlings comes from the Dynamite Hill block. Some Petite Sirah is interplanted with the Zinfandel at York Creek and thereby fermented together.

Petite Sirah ripens over 2-3 weeks in the York Creek blocks, coinciding with the majority of our other vineyards. We frequently pick up one bin while picking up a truck load of Zinfandel or Cabernet from York Creek.

DN: Have you evaluated the different effects of adding Petite Sirah to the fermenter versus later in the vinification process?

PD: Primary fermentation marries the grapes more fully and maybe produces a slightly different character. But that is very esoteric, you can refine the wine's style in blending trials.

DN: Ridge was thought of as the leader of the big Zinfandel style movement in the 1970's by some. Can you comment?

PD: Our style has always been to produce wines with 12.5-14.5% alcohol—compatible with food. We were and always have been making richer, more complex wines but not with **high** alcohol.

Our harvest target was 23° Brix. In Amador county, in the warm years of 1977-78, the grapes got away from us. But only 10% of our production was in the 14.5-15.5% alcohol range, the remaining 90% was near 13.5%. The wine writers wrote up the 10% portion. Others imitated our errors and produced higher alcohol levels.

DN: You often use Claret to describe your style of Zinfandel, could you explain that?

PD: Claret is an English word for red wine from all of Bordeaux, whether Pomerol, St. Emilion, Pauillac, or Margaux. The Claret style requires traditional Bordeaux techniques: grapes being fermented dry on the skins, completing malolactic fermentation, and ageing in oak—in order to get all the complexities possible. Many Zinfandels produced are not complex, but one dimensional.

DN: Are there other traditional techniques?

PD: Grapes are crushed gently to avoid cutting stems, crushing seeds, or macerating the grapes while destemming and breaking skins. We do not use a helical screw to deliver the grapes to our Demoisy crusher/stemmer; we set the rollers wide for minimal crushing, with the screen in all the way to remove all stems.

Our 90,000 Gallons of stainless steel tanks are not traditional, but they are better than wooden fermenters because during fermentation you're getting no ageing—no affect from the wood—either from air penetrating through the wood into the wine, or from the wood giving a flavor to the wine. The fermenters have 1,000, 2,000, or 3,000 Gallon capacities.

Most of the Bordeaux chateaux and fine Burgundy estates ferment on the natural wine yeast. Since 1969, we happen to have the native natural yeasts every year. They are adequate but not vigorous. We do have a commercial strain on hand, and if a fermenter did not start within, say 12 hours, we would use the commercial yeast, but it has not yet been necessary.

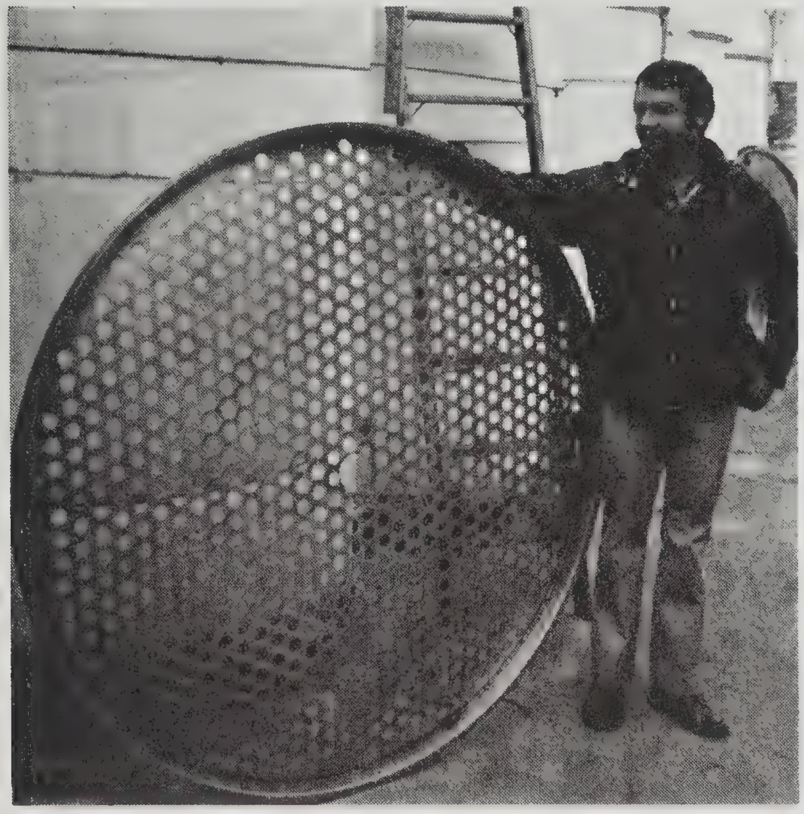
We try to do submerged cap fermentation on as much Zinfandel as possible. This involves a grid to hold the grapes below the surface of the liquid to allow the grapes to macerate after they have fermented dry, without worrying about the cap acetifying.

The grid concept is very traditional. There was evidence of wood grids in use in neighboring wineries here on Montebello Ridge from the 1880's to 1890's. When Dave Bennion, a Ridge owner-partner and first winemaker, first made wine here in 1962 or '63 on a part-time basis, he filled an old 1,000 Gallon redwood tank with crushed grapes under a wood grid on Sunday, left it and came back the following Saturday.

When we installed stainless steel tanks in 1971 to ferment 12-15,000 Gallons, we used three wood grids for fermentation. In 1972 we added stainless steel grids. Up until 1976, 80-90% of the Zinfandel received submerged-cap fermentation. Our Zinfandel production peaked at about 50,000 Gallons/year in 1979 and about 60% is fermented with submerged-cap.

DN: What is the frequency of pump-over with submerged-cap versus non submerged-cap fermentation?

PD: With submerged-cap fermenters, we turnover all the liquid once a day with air during the first two days of fermentation. The day before pressing, we gently turnover the liquid without air. With other fermenters, we have a 4-inch twin-piston pump that turns over the tank 45 minutes each day of fermentation.



STAINLESS STEEL GRID placed in fermenters for submerged-cap fermentation is shown by Draper.

DN: What temperatures do you achieve during fermentation?

PD: Juice temperatures begin in the mid-60's, and peak in the low 80's for about five days. Cap temperatures are typically in the 80's during much of the active fermentation.

DN: What kind of presses do you use?

PD: We have had a horizontal basket press for some time. In 1979 we added a tank press, which was replaced by a larger modified-membrane press in 1982. The newer presses have improved clarity by lowering the solids levels. We were achieving a final yield of 150 Gallons/ton and have increased that to about 160 with the newer presses.

DN: How do you manage malolactic fermentation? What do you do to maintain warmth if necessary to finish malolactic?

PD: We rely on the natural lactobacillus to start malolactic fermentation in the tanks. If we must move the wine to barrels for lack of tank space during the crush and the wine does not finish malolactic when tank space becomes available, we will return the wine to a tank to finish. We want to take wine to barrel with minimal dregs.

The key is to not let the wine cool down or clean up too much before malolactic finishes. To maintain warmth, we put foam insulation sheets on the outside of tanks and run 75 °F water through the jackets. After completing malolactic fermentation, we add 50 ppm SO_2. Depending on the vintage, we have had malolactic finish between five weeks and five months. We use enzymatic analysis of malic acid to determine malolactic completion.

DN: What is your barrel ageing program?

PD: We have about 1,650 barrels filled with Zinfandel. We buy about 95% new Bluegrass American oak barrels, primarily from Wisconsin, that have been steamed and fired with a medium toast.

All lots see some new and old oak barrels in the blends. We never treat barrels with soda ash, just one hot water rinse to loosen the lees, followed by three cold water rinses and a sulphur wick.

TANKS AT RIDGE covered with insulation to assist malolactic fermentation.

We extract fresh oak flavors through the first 6-24 months. After that we extract a different oak character during the following 4-5 years. Depending on the integrity of the barrel at that time, we will use some and sell some. We also scrape some once and toast again, which introduces a new flavor spectrum for another 3-4 years.

We top barrels every 10 days and rack 3-4 times in the first six months, using CO_2 to minimize oxidation. The wine is usually racked an average of three more times before bottling. We constantly taste the wines and analyze for microbiological stability. We monitor SO_2 levels of each lot before and after each racking by analysis of the decolorization of red pigments with a spectrophotometer using acid aldehyde and SO_2.

DN: What about fining?

PD: Traditional Bordeaux practices of 100 years ago held there was no need to use egg whites or other fining agents if the wines were already stable and clear. We only use fining when there is a real reason, such as lack of clarity or cleanness on the palate or a potential of instability. We experiment with each lot to determine the minimum fining needed to achieve the desired quality. Over 70% of our wines in any given year are not fined.

DN: Has fining become a bigger factor in recent years?

PD: Yes, during my first eight years as winemaker at Ridge, my approach was that if a wine was clear and stable and did not have excessive tannin, it did not need to be fined.

In the last six years, I have found, through careful fining trials, that fining at low levels can contribute to complexity in bouquet and flavor. To date, my favorite agents are fresh egg whites or silver-leaf gelatin, but we do trials with other agents also. We fine the wines in the tanks and 1-2 egg whites/50 Gal is often adequate.

DN: What about filtration?

PD: We do very little filtering. We believe that if you can get clarity and stability in your red wines without filtration, you tend to have a bigger, richer wine with more character, more nuance. Less than 10% of our wines have been filtered through our cartridge pad filter.

DN: How predictable is it to determine a style of Zinfandel by techniques used during fermentation?

PD: If you have experience with a vineyard and you have assessed the qualities of the grape, visually and by taste, you can then certainly come close to predicting the result by varying the amount of pump-over, length of time in the fermenter, or degree Brix at pressing.

DN: Could you expand upon Zinfandel with food?

PD: I make wine to be drunk as a complement to food. In 1983, we did a tasting where our Zinfandel was served with Lobster as a first course and a Zinfandel Essence was served with Strawberry Coulis as the dessert. They both worked very well. It is certainly true that high alcohol Zinfandels are rarely a good match for typical fine cuisine. We produce very few high-alcohol bottlings.

DN: When do the wines begin to show their style and/or reach the fullness of their expression?

PD: Our Zinfandels receive 15-22 months of barrel age and are usually released with six months of bottle age. York Creek in most ideal years, comes together two years after release. The spicy Paso Robles comes together about one year after release and the rich, berry-like Geyserville usually needs two years after release. The '81 Amador was showing well six months after release.

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Stand Up For ZINFANDEL

By Robert H. Kozlowski, Ph.D.

Zinfandel, the orphan grape adopted by California winemakers as their own varietal, is unique to California. Winemakers have proved it to be a noble varietal. They've made it into a bewildering array of reds ranging from light quaffing wines to classic clarets to big, bold monsters, and into unique whites and fruity rose's.

Like a chameleon, it takes on a different character depending on its environment, and responds uniquely to the location in which it is planted and to the hands of the winemaker. Why then is it losing popularity?

Is there too much of it? California plantings of noble red varietals show Zinfandel the leader. (See Table I) Cabernet Sauvignon, more than tripling in 10 years, closed the gap when plantings peaked in 1977-78.

NOBILITY OF RED VARIETALS

Fiefdom (1)	
28,000	The Mysterious **COUNT ZIN** of California
22,000	The Popular **KING CAB** of Sauvignon
9,000	The Elusive **PRINCE PINOT**, the black
8,300	The Bold **DUKE SIRAH**, the small
7,700	The Gentle **EARL GAMAY** of Beaujolais and Napa
75,000	

(1) California Grape Acres 1982

TABLE I

These plantings represent a loss of about 10-20% in both varietals since that peaking, reflecting a demand for whites. Zinfandel is planted widely throughout California, about 1/2 in Sonoma county and around Lodi, and more than 2/3 was planted before the 1970's.

In 1982, the industry crushed about the same amount of Cabernet and Zinfandel – about 83,000 tons, equivalent to about 5½ million cases of wine each. However, in 1980 the Zinfandel picked totalled 40% more than this – or about 8 million cases. (Of course, not all of this was bottled as Zinfandel.) To paraphrase retailer Darrell Corti, "There isn't a glut of Zinfandel, we just can't sell it."

Are there too many producers? At last count, there were about 250, a tripling since the start of the wine boom in the '70's. But, there are almost 400 Cabernet Sauvignon producers today.

Maybe the name isn't glamorous enough? Let's take a crack at a change. We could make it sound French, **Cinfandet.** Or make it harder to pronounce, **Zinfandelski.** Or return to the Italian version, **Primitivo,** or maybe just Anglicize it into **Sylvan Dell.** But why start over?

Again, what happened? There were a lot of Zinfandel grapes prior to 1970, but most of it was being used in jug wines. Winemakers began to produce it as a varietal, consumers clamored for this unique fruity and spicy red wine, and more winemakers got into the act. In the last ten years, Zinfandel producers tripled.

Some winemakers got caught up in the 'make the biggest, tannic, blockbuster possible to win winetastings' syndrome. That got a lot of ink. Then came 'late harvest' Zinfandels. People began asking, "What kind of food goes with this wine?", and moved to Cabernet as it became more available. Growers began grafting vines over to Chardonnay and Sauvignon Blanc. Producers began reacting by 1) making more white Zinfandel (I'd guess that nearly 20% of 1983 Zinfandel crushed went to white), 2) putting more red Zinfandel into their generics, or 3) moving away from making blockbuster or late harvest styles.

Since this is what the consumer wanted, it made good economic sense to react to the market. Slippage in red Zinfandel demand continued.

Where do we go from here? In six months, I've collected nearly 20 articles written on Zinfandel. (See Table II) These articles discuss the market, history, origins, production, styles and versatility. They define problems and suggest some solutions.

Some suggest we let the trend continue: make more of it into white and put more into generics and inexpensive quaffing wines – 'in the old style', whatever that is. Others say: "Vive la difference", "Seek and Ye shall find your style", "Continue to surprise me". In other words, let the producers continue to provide a wide range of styles and let the consumer decide what he wants.

So, where are we? A group of Zinfandel producers decided that instead of sitting back and letting the market dwindle, we would try to see if we could influence and change the market. The strategy worked recently with Italian wines.

In May 1983, a Sierra Foothills Winegrowers Association

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Titles of Recent Zinfandel Articles

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Which Way From Here?
Zinfandel, All Hail
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Moby Grape
A Balancing Act
California's Orphan Grape
Zinful Wines
Its Infinite Variety

Table II

workshop addressed the problem with growers, winemakers, merchants and wine-writers. It quickly became evident that customers confused by all the styles backed-off from buying. There was a decision to formulate an industry-wide group to promote Zinfandel and to educate the consumer. We call it the Zinfandel Guild.

Goals of the Zinfandel Guild are simple: consumer education, product identification and industry marketing support. We send out media information, appoint district representatives to keep their districts informed, request seed money from members and develop education/promotion programs, and promote all-Zinfandel tastings. We also give support to Dr. Ann Noble's work at U.C. Davis on developing descriptor terms for Zinfandel.

The Guild's major tasks are: a) defining styles of Zinfandel, b) getting agreement from producers to admit to their style, c) monitoring the agreement, d) developing a way for the consumer to choose his/her style easily, e) communicating to associate members, and, f) getting enough money to do all this properly.

If it is not done right, the Zinfandel Guild will just be a lip service society, and Zinfandel will just go on 'doing its own thing'.

Zinfandel is the wine for all reasons! (See Table III.)

It is surely **unique**. It does have a **mystique** (Historians are still looking for where it really came from. It might have come from Austro-Hungary after all — perhaps a Black Sylvaner.)

Zinfandel, The Wine For All Reasons

Unique
Mystique
Romantic
Stylistic
Versatile
Affordable
Available
Promotable

Table III

It is **romantic**. (Did you know that at the turn of the century there was a steamer named Zinfandel traveling between Napa and San Francisco? There was a race horse in the 1905 Irish Sweepstakes named Zinfandel? There was even a San Francisco murder case in which the judge overturned the verdict when he found out the jury drank Zinfandel with dinner during deliberation?

It is **versatile** — there is no doubt about the many styles of Zinfandel. We hope it's **affordable**, God knows it's **available**, and I am convinced it's **promotable**.

Go out and drink some Zinfandel, tell your friends to drink some Zinfandel, and help your customers in choosing their Zinfandels. Remember the mark of Zorro?

Based on a talk given at the California Wine Festival, Monterey, CA, November 29, 1983. Kozlowski, of Kenwood Vineyards, Kenwood, CA, is chairman of the Zinfandel Guild. More information is available from the Zinfandel Guild, 109 Minna St. Suite 700, San Francisco, CA 94105.

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Wine Ageing in the Bottle

by Justin R. Meyer
Silver Oak Cellars, Oakville, CA

No one knows the full story about what happens during bottle ageing. We do know enough so that if we examine all the individual facets, some light is shed. Bottle bouquet, complexity, the need for breathing, decanting, bottle sickness, corkiness, various types of sediment and tartrates in the bottle or on the cork—are all proof-positive that some reaction is occurring in the bottle.

Albeit, bottle ageing is quite different from bulk ageing in many aspects. Some researchers refer to the bulk process as **maturation**, indicating the wine's significant changes in developing toward maturity. They then use the word **ageing** for what happens in the bottle to signify **a certain state of maturity**, wherein the **changes are slower and more subtle**.

It could be said of both maturation in bulk and ageing in the bottle that the major role of ageing is to increase complexity of wine. Complexity adds interest and prolongs enjoyment—whether sensed by tasting, hearing, or sight. Therefore, in general, we can say that complexity is automatically a positive quality factor in wine flavor, and ageing a wine usually will add complexity by its very nature.

Using red table wine as an example, during maturation in bulk the principal processes are oxidation and extraction of wood flavor and aromas. Simultaneously, the wine is undergoing clarification, evaporation and concentration, loss of fermentation residues and carbon dioxide, and the stabilization of tartrates and malic acid in the malolactic conversion. Factors which influence maturation in bulk are: 1) air contact, 2) temperature, and 3) surface to volume ratio.

In ageing after bottling, a properly sealed bottle is essentially a hermetic container (sealed so as to exclude air) and, therefore, we have to think of bottle ageing as a chemical reaction which takes place in the **absence** of oxygen. This is the major reason that bottle ageing produces new and additional reactions and further complexities, compared to the preceeding bulk maturation.

According to Dr. Vernon L. Singleton, at U.C. Davis, if the bottle has a well-placed, intact cork, it would take the wine approximately 60 years in the bottle, to equal the simple saturation of wine with air as when it is pumped in the bulk state.

Singleton adds the predominant reason that a bottled wine eventually deteriorates, and when it does, it usually worsens relatively rapidly, is that the very slow oxidation eventually consumes enough of the oxidizable substrate to over-balance the wine's ability to recover from, or resist, such changes.

Other processes of bulk maturation: clarification, stabilization, and evaporation, should not be a significant factor during bottle ageing.

Granted, we do encounter some wines which have sediment in the bottle. This could be acceptable or undesirable. Many older wines, for instance, will drop color pigment. This may often be found on the shoulders of the bottle, giving a more or less 'crusty' appearance.

Tartrates might be found on the cork's surface exposed to wine, or sediment on the bottom of the bottle, depending on age of the wine. In many cases, these may have no deleterious effect on the wine's quality. They may even be considered a positive sign that the wine has not been over-processed by the winemaker.

Some sediments and carbon-dioxide gas created, for instance, by malolactic fermentation in the bottle, could be undesirable and also carry with it flavors and aromas which detract from the wine's quality.

We cannot say that sediment, per se, is either good or bad, other than the fact that no one enjoys getting a mouth full of sediment with the last pour from the bottle.

It has long been known that a freshly bottled wine with some dissolved oxygen in the wine and some more in the head space, consumes this oxygen over a month or so, with a concomittant drop in the oxidation-reduction potential, which is then maintained at a relatively low 'reduced' rest potential for a long time. This is apparently part of the reason for the temporary 'bottle-sickness' of freshly bottled wines.

While wood extraction is important during bulk maturation, this is obviously no longer a factor when the wine is in glass, which is in an inert container. The wood aromas and flavors may change or complex in the bottle. While the winemaker must be aware of this, he can no longer increase nor decrease the woody character of the wine, once it is in the bottle.

On the other hand, we are now dealing with a cork-sealed container. As long as the cork is of good quality, it should impart no character to the wine. But we often encounter a wine which is 'corky' in either aroma or taste—this, of course, is considered a defect.

Today, I would consider corks as the biggest single culprit of defects in bottled wine. Corkiness, moldiness, oxidation, and acetification, are just some of the defects caused by a poor cork. I would hope and predict that we will find a better quality seal for premium wines in the future.

It is obvious that the same diameter cork will have a much different surface to volume ratio in a 375ML, 750ML, and a 1.5L bottle, and thus a greater effect on the smaller bottles.

But, we should no longer speak of either barrels nor corks as 'breathing'.

Dr. Richard Peterson, of The Monterey Vineyard, Gonzales, CA, demonstrated that as water and alcohol evaporate from a full, sealed barrel of wine, a considerable and progressive vacuum develops. Clearly air, either nitrogen or oxygen, is not penetrating appreciably into the wine through the walls of a full, tight barrel, or the vacuum would be relieved.

Many times, the question comes up of whether wines should be decanted or how long they should be permitted to breathe after opening. This is a subjective judgement, and sometimes for wines which have not been long in the bottle, the value of breathing is greatly over-rated, in my opinion.

I believe that breathing might be more justified for wines which have spent a long period of time in the bottle—wines which have undergone a chemical change, virtually in the absence of oxygen, or what a chemist would call anaerobic reactions.

An example of a common anaerobic reaction in bulk maturation, would be the formation of hydrogen sulfide, or the 'rotten egg' smell. Very frequently, some aeration, or the swirling of wine in a glass, will remove these smells.

Breathing of a bottle which has long been closed can have the same effect; and certainly pouring from the bottle into a glass will do the same thing. I'm sure we have come back to a wine during a meal, and it has seemed to improve substantially over our initial impression.

Ultimately, I question the whole concept of pulling the cork early to permit the wine to breathe. Wines which have not been long in the bottle do not need it. For wines which have spent long years in the bottle developing the nuances of bottle bouquet, it is a waste.

Only if there is a defect in the bouquet could breathing be beneficial. Personally, I would prefer to temporarily experience the defect lest I risk missing the fleeting elegance of a well bottle-aged wine.

If there is a defect I am confident it will be removed by a few swirls of the glass. Swirling or decanting is worth many hours of breathing. Uncorking and pouring immediately affords one the opportunity to experience all the nuances of bottle bouquet.

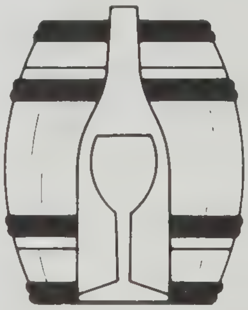
Let's look at storage conditions and ageing of a bottled wine. Most of the literature considers 12°C, or 55°F, as the traditional cellar temperature during bottle ageing. It can be said that: 1) the cooler the bottle ageing conditions, more young wine character is retained and for a longer period of time. 2) The warmer the storage, the faster the bottle ageing. 3) Uniform storage temperatures appear important for two major reasons: a short period of warm storage produces so rapid a change that control of the process may be lost without very close attention, and varing temperatures move corks and risk oxygen entrance.

Singleton experimented with accelerated ageing, using warmer temperatures and found that while he could not control it completely, he could develop bottle bouquet characteristics in 30 days at 53°C, (over 125°F), which would take four years to develop at 55°F. This is the result he expected, since one would expect 2-2½ times the reaction rate for each 10°C temperature increase.

I would not want to spoil your entire day by proposing that someday we might be able to do the following: Put a young red wine in a stainless steel tank with oak chips. Bubble oxygen through it at a given temperature. Take it out of bulk, at exactly the right time. Bottle it with a well-sealed crown cap. Ask the consumer in how many months or years he/she wants to drink the bottle, so we know at what temperature and humidity to set the bottle ageing cellar.

Certainly, if we can get to the moon, we could accomplish this if we poured enough research money into wine ageing and development. But, if we get winemaking to such an exact science, what are we going to discuss while drinking a glass or bottle of wine?

(editor's note: this was presented at the Napa Valley Wine Symposium, February 7, 1984.)



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TRUMPETVINE WINES SELLS ZINFANDEL

by Diane W. Mayfield

Trumpetvine Wines in Berkeley, CA, sells more Zinfandel than just about any other varietal wine.

Zinfandel? Zinfandel is in a soft market these days, and you can hardly give the stuff away. Try telling that to Trumpetvine's managing partners Stan Hock and Jim Brandley. Their wine shop carries nearly 75 different Zinfandels, they have no trouble selling any of it, and they use no gimmicks, no fancy marketing techniques.

Their secret? They **like** Zinfandel, and they hand-sell their wines. They know the wines personally, and make recommendations to their customers. Because they like Zinfandel, they frequently recommend one if it fits the customer's need.

There are no shelf-talkers in this store and no outside advertising. A personally-written monthly newsletter is their only advertising tool. The partners are oenophiles and collectors, and it is their enthusiasm which sells the product so successfully.

Wines are selected by a committee of three—Brandley, Hock, and employee Dick Winter, a home winemaker for 10 years, who has produced award-winning Zinfandels. Wines considered are from trade or personal tastings and are often tasted blind. If any two men vote for a particular wine, that wine can be selected for the shop's inventory.

"We are partial to reds and prefer big, rich, fruity Zins," says Hock. "Our current inventory has over 75 Zinfandels, almost 75 Cabernet Sauvignons, about 50 Chardonnays, and much less of other varietals. Our emphasis is on unusual or scarce, high-quality California wines."

With wineries facing a tight market today, economic reality forces them to do volume business with large outlets where the wine is **not** hand-sold or individually described.

"If I were a Zinfandel producer," says Hock, "I would do a thorough search, and ferret out stores that care about Zinfandel. I would not give way to panic and sell to more impersonal outlets. This could help bring Zinfandel out of its slump, clear up the confusion over style, and the consumer would be better informed."

How confusing is Zinfandel compared with other varietals? Chardonnay can be crisp, light, acidic, and appley or rich, fat, full, oaky, and oily. While certain varietal characteristics do exist for each grape, there are broad parameters within and around those characteristics. Even the same varietal from the same winery can change from vintage to vintage.

Confusing, perhaps, but not enough to give up drinking wine. Discovering the differences is half the fun.

Trumpetvine Wines not only has no trouble selling Zinfandel, but it has never had any trouble selling **heavy** Zinfandels (which comprise the bulk of the Zinfandel stock there). Despite their high tannins, alcohol and fruit, rich Zinfandels are more readily drinkable much sooner than rich, heavy Cabernets, and they will keep nearly as long. Moreover, rich, full-bodied Zinfandels can have the complexity and subtlety found in fine Cabernets.

ALMOST 75 ZINFANDEL LABELS fill these Trumpetvine Wine display racks sold by Jim Brandley, Stan Hock, and Dick Winter (l to r).

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Michael S. Dilley, Consultant

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What doesn't Zinfandel have? Prestige. Snob appeal. A French name. Many retailers push Burgundy and Bordeaux style wines — Chardonnays and Cabernets. With the advantage of time (and consequently greater name recognition) in their favor, wines from these regions have great snob appeal.

There has been a long-standing tradition of quality, partly based on a real and high standard, and partly based on the reputation of that quality, whether or not it is consistent.

On the other hand, Zinfandel has an obscure origin — and no long-standing tradition of quality. No far-spreading reputation upholds it in the marketplace today. It must stand on its present image, but conservative retailers see tradition and reputation as insuring greater sales.

"The majority of the Berkeley population (and the East Bay population in general) is more open to new, less familiar items," says Brandley. Populations of larger and more cosmopolitan areas tend to follow trends and traditional influences more easily. In Los Angeles, CA, a few years ago, winewriters gave thumbs-down to Zinfandel.

The east coast of the United States has closer ties to Europe, and buys more imports than California wines, since European wines are often cheaper. Berkeley, a university town, is uniquely Californian, and is more ready to accept a California-based wine such as Zinfandel.

"People here are willing to experiment to find quality, and will buy labels that no one has ever heard of before," Brandley says. "Because they are a more concentrated group of educated and sophisticated people, wine for the Berkeley populace is diverse.

"They have gone through the whole spectrum of wine, from simple sweet whites to drier, more complex whites to soft, fruity reds to the big, complex reds. Also, homewinemaking is a popular hobby in Berkeley, and Zinfandel is a relatively easy wine to begin with."

So the Berkeley resident/Trumpetvine consumer is likely to choose a red over a white, and may very well pick a Zinfandel over a Cabernet. Zinfandel is more experimental, less trendy, often equally rich and complex, probably more ready to drink. And it is almost certainly less expensive, an important consideration for students and teachers alike.

Due to California state law, Trumpetvine Wines cannot have a tasting room in their store if the shop is within a mile of the campus (despite the fact that there is a pub on campus). Relocating and setting up a tasting room with a small cafe is one of their goals.

Trumpetvine Wines has a steady and growing clientele attracted by a commitment to providing an inventory of unusual and high-quality California wines. Many of their customers are knowledgeable about wines.

Customers are not worried about confusion over different styles of Zinfandel, nor are they put off by rich, heavy, full-bodied, complex red wines. And they don't seem to care that Zinfandel doesn't have the snob appeal of Cabernet.

Trumpetvine Wines will sell Zinfandel — and very successfully — disproving current marketing problems. The best wines are never mass-produced; there is always a personal touch and a belief in producing a quality product.

The same philosophy is true for selling wines. That personal touch, knowing each wine and believing in it and passing that on to the consumer, is successful at Trumpetvine Wines.

Here, there is no Zinfandel slump.

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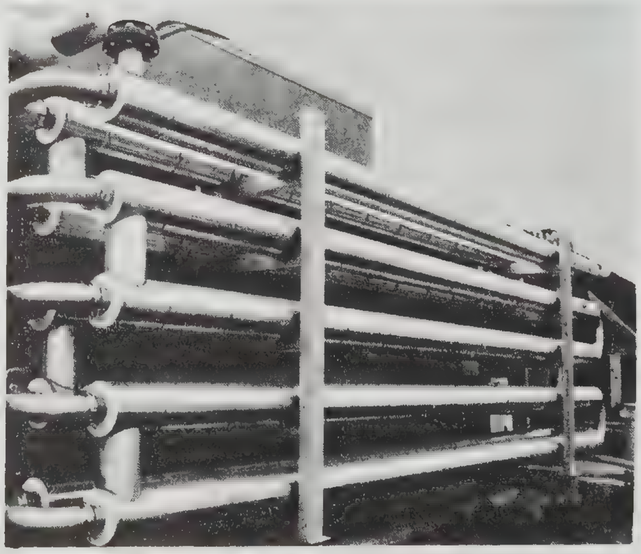

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Future for Biotechnology in the Vineyard and Cellar?

by **Don Blackburn, Mark Edwards and Diane Oliver, M.D.**

Winemakers may soon become the beneficiaries of highly advanced quality-control techniques, courtesy of work being done in biotechnology and genetic engineering. Problems such as bulk mold tests, must oxidases and determination of a wine's microbial health during ageing are currently being studied by Idetek, Inc. of San Bruno, CA.

Idetek is a biotechnology company, established to develop immunoassays for the food and agriculture industries. Building on successful work done in the citrus industry, Idetek visualizes new applications of immunodiagnostic testing technology to several aspects of grapegrowing and winemaking. Idetek is planning cooperative research programs with interested vineyard and winery operators.

In November of 1983, Idetek introduced a *BITTERDETEK* test kit to the citrus industry. The kit allows a technician without special laboratory skills to determine the precise level of limonin, the principal naturally-occurring bittering agent in processed citrus juice, such as grapefruit juice. Rapid limonin analysis allows a technician to blend batches of varying concentrations so as to bring the bitterness down to acceptable levels.

BITTERDETEK has a turn-around time of less than two hours and cost of only $3.00/analysis. This information, in turn, permits control of bitterness in the final product by adjustment of the fruit extractor setting, blending operations and precise timing of fruit harvest. Most major California citrus processors are already using the test, and the kit is being demonstrated in Arizona, Florida and Texas.

A brief description of the test demonstrates Idetek's basic approach, which is broadly applicable to a number of quality-control areas in the wine industry.

The principle behind the *BITTERDETEK*™ assay is the competitive binding of antigens to antibodies. Miniature wells are filled with an antibody specific to the substance being tested for, in this example, limonin.

A mixture containing both the sample and an enzyme-labeled tracer is then added to these wells. The limonin in the sample and the tracer then 'compete' for antibody binding sites. When the reaction is completed, it is possible to either visually or 'colorimetrically' interpret the concentration of limonin, since the enzyme-linked tracer is designed to change colors when it (and not the limonin) achieves antibody binding. Using a spectrophotometer, it is possible to interpret these results to a precision of 0.1 ppm with high reproduceability.

Idetek plans to develop specific applications of this technology for the wine industry. For instance, they have begun work on a bulk mold test, which will permit reliable identification of percentage molds for machine-harvested grapes.

A refined version of the test, in which quantitative data on the level of each mold may be simultaneously collected, is also under consideration.

For grape-growers, Idetek hopes to develop new methods for analyzing a soil's viticultural aptitude before planting, determining soil nutrient deficiencies and identifying grape viruses.

For winemakers, Idetek is now investigating methods for detecting Brettanomyces and other off-flavor causing agents, a quick test for oxidases in must and faster methods for spotting microbial contamination at bottling.

Idetek is interested in discussing these and other product development areas with interested wineries and university researchers. Inquiries can be addressed to Dr. Diane G. Oliver, President, Idetek, Inc., 1057 Sneath Lane, San Bruno, CA 94066 (415) 952-2844.

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WORKING TOGETHER

GROWERS & WINERIES

Can Improve Wine Quality

by Robert Phillips

One of the major challenges confronting grape-growers is to adapt to the dramatic change that has taken place in the market for winegrapes. In 1983, Napa Valley growers delivered approximately 55,000 tons to local wineries — almost 60% of the grapes crushed by those wineries.

Until about fifteen years ago there were really only a few markets for our grapes. These included wineries such as Christian Brothers, Charles Krug, Beringer, Mondavi, Martini, Beaulieu and Inglenook.

The pattern was for a grower to establish a long-term contractual relationship with one of the wineries, with the price paid for his grapes most often being the average of the price paid by several of the other wineries.

There was great price stability in those days but little motivation for the grower to make a commitment to improved quality. Emphasis was on high yield/acre.

Napa Valley growers today have over 100 wineries as potential grape buyers. However, doors to most of these wineries are only open to those growers who have varieties suited to the soil of their vineyard and to the market, and who have made a total commitment to quality.

Compensation is increasingly based on grape quality, and those who have not made this commitment are left with grapes either on the vine, or to be sold at distressed prices.

In the 1982 harvest, the average Napa Valley grower's return on Chardonnay was $1,398/ton. Yet sales took place as low as $700 and as high as $2,000. On Cabernet, the average grower return was $846/ton, with sales as low as $475 and as high as $2,000.

The impact of over a 400% difference in price upon a grower's profit margins makes it obvious that incentives for emphasizing quality are substantial. (1983 average grower returns were $1,291/ton for Chardonnay, and $741/ton for Cabernet Sauvignon.)

This change in grower compensation provides strong motivation to deliver the best quality grapes possible to wineries. High yield/acre is no longer the grower's primary goal, and is only relevant to the degree that it is compatible with quality.

If growers do not provide wineries with the best possible grapes they, in turn, cannot provide consumers with the quality wines so necessary to be competitive in the marketplace.

But, this brings us to a paradox with which most growers live. Growers are independent by nature and place a great deal of value on self-sufficiency and the ability to control their own destiny. In reality, however, growers are almost completely dependent upon wineries which buy their grapes.

This dependence has caused many growers to establish their own wineries to process their own grapes. This decision stems from the desire to escape the economic consequences of their dependence, and to enjoy the challenge and rewards of winemaking.

For those growers who choose not to integrate, selection of a winery for their grapes is of critical importance. A major factor in the degree to which growers can improve grape quality is the extent to which growers have the cooperation and support of the wineries.

To expand upon this point, let's look at two growers, both of whom have well-located land, and follow good viticultural practices. Grower 'A' delivers his grapes to a winery at

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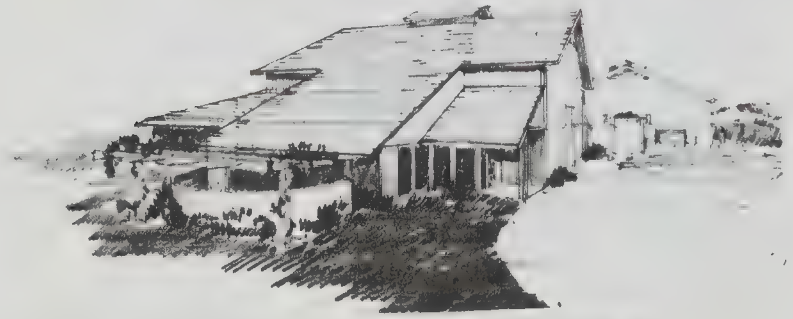

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harvest, receives payment in due time and has no further contact until the next harvest.

Grower 'B' has a somewhat different relationship with his winery—a partnership, in fact. The two meet periodically to observe, taste, appraise and hopefully agree upon viticultural practices that will further improve grape/wine quality. They might agree to modify pruning, irrigation, fertilizing or other techniques.

Grower 'B' is moving with direction, in partnership with his winery toward a goal they both desire. Grower 'A' is greatly handicapped in attaining his quality goals because his winery has not treated him as a true partner in interest. He is purely a grape resource, and for many of us this is not where our future lies.

Unfortunately, grower 'A' is doubly vulnerable should his winery decide not to continue the relationship—for whatever reason— for he has not had benefit of the winery's thoughts and counsel as to viticultural practices which could improve quality of wine from his grapes. Not only the grower, but the industry as a whole is a loser in this situation.

The grower's planning should also involve study of consumption and price trends . . .

It is inconceivable that, in any well-managed business, a product is sent to market without the product's producer having benefit of market testing in order to determine if the quality could be improved upon. In our industry, this information can only come to the grower from the winery.

Another area where a grower is dependent upon a winery is grape pricing. Some are set by negotiation or by formula, while others are set by the winery after grapes have been delivered and crushed. Since the factor influencing price is most often supply, swings can be dramatic.

For a grower attempting to improve quality through a sound re-planting program, price variations of up to 30-40% over a two-year span can be devastating. Again, winery and consumer are the losers, for a grower will often forego replanting and resultant quality improvement.

By contrast, wineries equating cost of grapes to income received from wine sales are in partnership with the grower, and both of their prosperities are tied to that of the industry.

In the case of negotiated prices, they are acceptable to the degree that a winery recognizes the fact that a fair price must reflect an investment by the grower back into his vineyard, in order to insure quality in future years.

The growers' fate is not completely in hands other than their own. The extent to which growers either possess or develop certain skills will greatly influence their success. A sound knowledge of viticulture is essential. The ability to plan ahead and discipline to carry out a plan is imperative.

It is five years between the time a vineyard is started and it bears fruit, and with Cabernet it is 8-9 years between planting and release to the consumer by the winery. An estimate of the cultural and overhead cost of establishing a vineyard is approximately $5,000/acre—exclusive of site preparation and equipment.

If a grower is going to enter into a planting or re-planting program, he must measure the impact of such an investment on his cash-flow and capital. Effects of price and yield variations must be taken into consideration so that no surprises are encountered along the way.

Once begun, the program cannot be terminated, and a thorough analysis might indicate that it should be approached in steps rather than all at one time. The grower's planning should also involve study of consumption and price trends in order that costly mistakes may be avoided in varietal selection.

Vineyardists try to cope with the unexpected. In the spring there are frosts, in the summer the mildew and possible early rains, and then the cycle begins again. These are the risks of the business, and are accepted as such. But growers must also be concerned with the sensitive and complex issues of imports and pricing, and land development.

The European Economic Community (EEC), as well as individual countries, have been heavily subsidizing the foreign wine industry. A total of 1.7 million farms cultivate winegrapes in France and Italy, and the political impact of these subsidies is apparent. An October 1983 U.S.D.A. report shows the EEC spent $570 million for wine subsidies in 1982, and this is **in addition to the expenditures by the individual countries.**

These and similar agricultural subsidies have virtually bankrupt the EEC and its very survival is in jeopardy. In our own country, subsidies may be a short-term expedient, but in the long-term they are self-defeating.

American growers are competitive with any in the world regarding quality and cost/ton. I believe this is true of our wineries also, and the last thing we want is subsidies. We are, however, entitled to compete on an equal basis with foreign **unsubsidized** competition.

Potentially more devastating is the encroachment upon agricultural land by the development interests. One of the most vulnerable areas at present is our hillsides, which, besides being scenic treasure provide very critical and sensitive watersheds for vineyards.

There are some who believe that they should be developed for fairly high-density home sites. Inevitably, any hillside development would be followed by an intrusion into the valley floor, with a disastrous impact on viticulture.

It is inevitable that the growing competitiveness in the industry will require growers to work in closer partnership with the wineries in order to continue to improve grape quality.

The future security of growers does not reside in marketing orders, subsidies or contracts. If growers produce the best winegrapes possible, on suitable land, we will have no need to worry about demand for our product at a price which will assure us profitability.

(Based on a talk given at the Napa Valley Wine Symposium, Feb. 6, 1984. Phillips is President of the Napa Valley Grape Growers Assoc. and partner in Vine Hill Ranch, Yountville, CA.)

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Grower's Perspective on Chardonnay

by Ron Wicker

High price, high quality, early harvest—and a nightmare to produce!

California wineries can produce world-class Chardonnay, and nothing makes a grower happier than to produce a product demanded by wineries and consumers alike. The rewards can be high; the frustrations many.

Pinot Chardonnay, in its true French fashion, seems adaptable to many combinations of climate and soils in the Napa Valley. Warm days and cool nights provide the proper environment for perfect balance of sugar, acid, pH and fruit maturity.

Chardonnay is not one of the higher producing varieties. The bulk is produced in cooler regions, and generally on less productive soils. 20% of Napa Valley's total acreage produces only 13% of its total production.

Vine growth, varying from light on shallow soils to heavy on deeper river bottom areas, creates a wide variety of cultural challenges for the grape-grower. Vine spacing, training, trellising and harvest methods vary from area to area.

Vine spacing is largely a factor of expected foliage growth. Today closer spacings are used in an attempt to limit vine vigor. Generally, less vigorous conditions allow closer spacing of 4X10 or 6X10, and more vigorous conditions dictate wider spacings of 8X11 or 8X12 to allow for proper canopy development.

Both cane and cordon training systems are used for Chardonnay. Cane pruning allows for the replacement of last year's fruiting wood with new canes, and allows the new wood to be left in different positions on the vine each year. It is most commonly used in lighter producing areas as there is a tendency for over-production.

The fruit also tends to cluster together, creating a number of problems including: 1) uneven fruit maturity, 2) more difficult hand-harvesting, and 3) decreased effectiveness of dust and spray applications resulting in increased botrytis bunch-rot damage and increased potential of mildew damage.

Cordon training, is more predominant in heavier producing vineyards. A permanent vine structure is used and only the spurs are replaced each year. With cordon vines, fruit is spread evenly along the wires, pruning is simpler, and harvesting is easier.

Almost all Chardonnay uses some form of wire trellising system. A fruit or cordon wire is used to support the canes or cordons, and is usually located 14-16" below the top of the stake. The foliage, or catch wire, may be a single wire or multiple wires supported on cross-arms at the top of the stake. They provide shade for the delicate fruit underneath, increase leaf exposure to the sun, and minimize shoot breakage from the wind.

For those growers wishing to snooze during the season, Chardonnay certainly is not a grower's best friend. More cultural problems plague Chardonnay than any other variety we produce. Chardonnay's early bud break in the spring makes it one variety very susceptible to frost damage.

In areas like the Carneros district, where the yield is only 1½-2 tons/acre, one advantage is that the area is relatively frost-free. The same can be said for hillside vineyards. On the Napa Valley floor, however, the need for frost protection is critical.

Wind machines are used to bring warm air, usually only 20-30 feet above the ground, down to vine level. They are very effective in strong inversion conditions, during which there may be 15 degree warmer air 30 feet up.

Where adequate water is available, overhead sprinklers are used to give positive protection down to very low temperatures. Heat is given off as water freezes and maintains tissue temperatures above the critical point. Both methods of frost protection result in higher costs, and many long nights for the grower.

Cutworm can be a serious pest problem because often Chardonnay starts to grow before the ground can be

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cultivated. Cutworm damage is elimination of many primary fruit-bearing buds.

Chardonnay is also one of the most brittle grape varieties. After growth of 12-18", the slightest wind will break many shoots and leave them hanging dead rather than reaching for the top wires. Along with those shoots go potential grape clusters and, in many cases, wood needed for the coming year's pruning.

Chardonnay is one of the varieties most susceptible to damage from powdery mildew. Ten years ago, the typical Napa Valley grape-grower applied sulphur dust three times/year for effective mildew control, at a total cost of $15/acre. Today's Chardonnay grower uses a combination of spraying and dusting, at a cost of $120-$150/acre.

With one misjudged application the grower finds himself using extremely expensive handwashing methods. Mildew stops the normal development of the berry and leaves a very strong characteristic odor. It is a problem for which most wineries have very low tolerance.

In recent years, botrytis bunch rot has become a major problem. As we develop higher producing clones of Chardonnay, the importance of spreading the fruit along the vine becomes critical. Early rains, heavy foliage canopies, and higher crop levels set the scene for potential crop loss.

In 1982 and 1983, 15-25% of the Chardonnay crop in Napa Valley was lost to botrytis bunch-rot. However, growers' diligence and selective picking resulted in delivering wineries the very finest Chardonnay during these years.

A bacterium carried by a tiny leaf hopper is the causal agent for the fatal grapevine disease known as 'Pierce's Disease', and again, Chardonnay is one of the most susceptible. Once infected, the Chardonnay vine will decline rapidly in production and die within 2-3 years. Once the vine is infected, there is no commercial treatment for Pierce's Disease, and the end result is replacement.

The major preventative step is to not plant Chardonnay in areas known to harbor the Pierce's Disease vector. Unfortunately, the areas bordering the Napa River, creeks and brushlands are hot areas for Pierce's Disease – and prime areas for the production of high-quality Chardonnay.

Historically, Pierce's Disease has been one of the major reasons for the relatively short 12-15 year production span for Chardonnay vineyards. Replacement is very expensive and usually not considered until vine loss reaches 30-35% levels.

Chardonnay fruit is also highly susceptible to sunburn damage, particularly in poorer soils and with young vines that do not develop adequate foliage canopies. For this reason young vines are not considered as high-quality producers as older, mature vines. Thus from planting until optimal fruit quality may be as long as 5-6 years – **or 1/3 of the vineyard's expected life.**

Usually Chardonnay in Napa Valley has been hand-harvested. However, it can be machine-picked very well, with a minimum of berry breakage and juicing. (Advantages over hand-picking the 1/4-1/3 lb. clusters is obvious.) Much of the Chardonnay used for sparkling wine production in the Napa Valley is machine harvested. Current vintner attitudes toward machine-harvesting range from 'preferable' to 'prohibited'.

Recently there has been significant progress in identifying areas producing the highest-quality Chardonnay. This iden-

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tification process has been a long and expensive one. It takes 6-7 years from the time a grower makes his planting decision until he knows he can produce the high quality demanded in today's market.

Within each of the general areas are many microclimates, providing a grower the opportunity to match variety, climate and soil type to achieve optimum results. Climate is the single, most important factor for proper balance of sugar, acid and fruit maturity.

The cool, windy Carneros district produces some of the finest Chardonnay. This area is liberally blessed with some of the shallower, poorer soils in Napa Valley, and Chardonnays from this area generally produce complex, well-balanced, and subtle wines.

Further away from the cooling effects of San Francisco Bay, Chardonnays tend to be fruitier, with slightly lower acid. A variety of soil combinations in these areas (Regions I-II) produce grapes of very high-quality, though differing somewhat in style.

Recent developments in hillside vineyard technology allow the benefits of elevations to be combined with shallower soils and precise water management. This provides yet another tool to maximize fruit quality, particularly in areas not normally considered Chardonnay producing areas.

But what does quality mean to the wine-grape-grower? It means they have to produce the finest possible fruit at a reasonable cost. We deal with this factor in the beginning, when we buy land for grape production. Location, variety selection, production methods and market selection require considerable financial investment, years of patience, and attention to detail.

The wine industry is growing, but stable. Demand for wines produced from premium grapes will continue to rise, but at what price levels? The bottle price has already reached a consumer-acceptable plateau.

Wineries and growers, however, will continue to see rises in productions costs. Labor and materials costs will rise. If the grower is to compete effectively, he will have to increase his ability to produce higher-yielding, higher-quality fruit at higher levels of efficiency. The result to the consumer is higher-quality wine without significant increases in bottle prices.

Considering inflated dollar values, growers received the same price in 1982 as in 1972, but had to absorb the increase in production costs by becoming more efficient producers. Improved clonal selection, disease-free rootstock, and improved viticultural practices are critical management tools used to optimize efficient quality production.

Without high-quality grapes, wineries cannot produce high-quality wines. What is needed is an increasing spirit of cooperation between dedicated vintners and quality-conscious growers.

(Based on a talk given at the Napa Valley Wine Symposium, Feb. 6, 1984. Wicker is Vice-President of the Napa Valley Grape Growers Assoc. and head of a vineyard management company.)

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Developing a Hillside Irrigation System

By Steve Soper
President, Water Dynamics Inc.

Locating a reliable water source for irrigation of a vineyard is of primary importance to the grape-grower. The two most common water sources are a well or reservoir. Topography of the land and surrounding established wells affect the choice of the water source to be depended on throughout the irrigation season.

It is important to establish what the water needs will be in the **sixth** year of vineyard growth. This allows an irrigation system designer to size the reservoir to hold the required number of acre feet of water. The recharge capability from springs, rivers, or sumps have an important influence on this decision.

In determining the total water demand/season on vineyards in Napa and Sonoma counties, we use a conservative volume of 250 gallons/vine/season. This total varies due to the vineyard location, soil types, grape variety, hillside versus flat ground, and micro-climates.

250 gallons equals 10 gallons/vine/week for a six-year-old or older vine over a 4-5 month period. This is a suggested rule of thumb for planning water storage and development, but varies from ranch to ranch and from grower to grower depending on their cultural and farming practices.

Pump Station Development

If the water source is a well, either a submersible pump or turbine pump must be used. If there is a reservoir, either a centrifugal or submersible pump must be used. Some drip systems require use of submersible pumps because of the pressures required to lift water up a hillside. Our highest rated operating system requires 325 p.s.i. from the reservoir source.

Filtration of water is probably one of the most important parts of a drip system. Generally, stainless steel filter screens and/or sand separators are sufficient filtration for a well source. If a mineral is present in the well water, it should be identified and dealt with if a potential problem is evident.

A water analysis should always be done on wells to be used for drip irrigation. If a reservoir is the water source, then sand filters are recommended because they do the best job of trapping organic matter on top of the sand bed. Organic matter can be pushed through a screen-type filter by high pressure which occurs when the filter becomes clogged.

If a contaminated water source is used, such as a reservoir, sand filters must be automated so that they automatically backflush when a 5 p.s.i. loss is sensed across the filter intake and discharge lines. The automated equipment on the filter system will insure full delivery of water to the vines during the irrigation cycle.

If a reservoir is the water source, a water quality control program is recommended. The University of California extension office has an information sheet on how to maintain water quality in ponds and reservoirs with the use of copper sulfate.

Copper sulfate is very safe to use and will not harm fish when proper amounts are applied. When the water source is kept fairly clean, sand filters do not have to be in the backflush cycle very much of the time that you are irrigating.

There are several devices that should be part of a pump station. A water meter allows you to check the accuracy of the system by logging hours of operation and number of gallons/hour delivered. If a problem is developing in the amount of water delivered by the irrigation system, you will detect it early in the operation of the system before any damage occurs to the vines.

Safeties should be installed on all pumps. A low-water elec-

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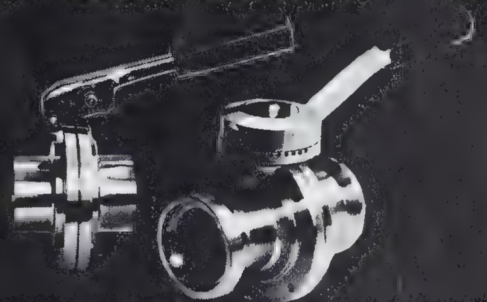

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trode should be installed in a well so that if the water table drops below the location of the pump setting, the pump will shut-off and not run without water going through it.

On centrifugal pumps, a low pressure cut-off switch or flow switch can be installed so that if the pump loses prime or runs out of water, it will automatically shut-down before damage occurs to the pump.

Irrigation System Design

The first criteria is for the grower or vineyard manager to identify different soil types, where different varieties will be planted, and where the plantable hillsides and flat ground are located.

Different soil types have different moisture holding capabilities. Therefore, different soils will have different amounts of water available for a growing vine. Some grape varieties have more vigor and canopy than others, therefore requiring different amounts of water.

Hillsides generally drain water off sooner than flat ground. Hillsides may have to be irrigated more frequently than vines planted in a low flat area. All these factors go into how to divide up a vineyard and how these different situations will be handled.

Irrigation scheduling is very important in determining how a drip irrigation system is sized and operated. If soils are light and do not maintain moisture long, the total acreage may have to be irrigated in two days.

In this situation, the pumps have to be sized to deliver the amount of water required in the two-day time period and the mainlines and submains sized to accomodate the required flow rates. If there is a five-day irrigation cycle, the pump and piping are sized smaller.

The water source has a large influence on how many vines can be irrigated at one time.

We recommend the placement of tensiometers at 24 inches below the soil's surface to help determine how much water is needed and when to apply it. A tensiometer reads on a scale of 0-100 centibars. We recommend starting an irrigation cycle when the reading is 40 centibars. The water should be turned off when the tensiometer gauge is reading 10 centibars.

At 10 centibars, there is still oxygen present in the soil structure and gases coming from the roots can still be released through the soil. If the soil structure is allowed to be completely saturated, then gases cannot rise to the soil surface and growth is stopped temporarily.

Size of pipe is very important in a hillside irrigation system. Mainlines and submains must be sized properly to provide adequate water throughout the system. We install pressure regulators to reduce pressure in our piping rather than reducing pipe size to use up unwanted pressure when water is flowing downhill.

It is easier to adjust and maintain a pressure regulator above ground, than to dig up pipes and change their size, after they have been buried in the ground.

When pumping uphill, piping should be sized so that there is the smallest amount of friction-loss and thus keep the required pump horsepower at a minimum. Proper pressure ratings of pipes have to be used as well: depending on the greatest operating pressure of the system.

Drip emitters are also a very important part of the drip system. The flow variation should fit the hydraulic conditions of the irrigation system. Every system should have no greater flow variation than + −10%. With this guideline, every vine will get the same basic amounts of water and fertilizer.

We recommend use of two 1/2 gph emitters/vine. Wetting both sides encourages root growth on both sides of the vine creating a larger root-to-soil ratio and more nutrients are available to the vine. Infiltration of water is much better with 1/2 gph emitters and runoff down hillside terraces is greatly reduced or eliminated, depending on soil type.

Installation of an irrigation system should be done in the spring or summer, not in the fall. When the soil is backfilled over the new irrigation mainlines, all the cultural practices that take place in the spring and summer will help compact the soil in the trenches. This will help insure stability of the soil when winter rains come.

If a system is installed in the fall without adequate soil compaction over the pipes, and if early rains come, trenches can become drains for the water and soil which will wash down the trench.

It is very helpful if the mains and submains can be installed down the high part of a ridge instead of in an avenue at the bottom of a slope. In this way, water flows away from the trench to lower ground.

Polyethylene tubing, generally hung above the ground, can be attached to the grape stake, suspended from an existing trellis wire, or attached to a new wire just to hold the tubing. With the tubing off of the ground, emitters can be quickly checked during an irrigation cycle.

Emitter placement is very important if the vine row is on a slope. In using two emitters/vine, the uphill and downhill emitters should be positioned to drop water at one foot away from the trunk, so that the water is available to the vine's root system.

Fertilizer Program

Drip irrigation is the most efficient way to apply fertilizer. Application amounts and timing are very important when applying fertilizer through the drip system. To use effectively, you have to understand the movement of water in your particular soil.

Fertilizer should be injected before the water enters the filters. Application starts by first having water running in the system. You then inject the proper amount of fertilizer desired in the proper amount of time. The fertilizer will be moved down to the root zone by the remaining water in the irrigation cycle.

It is important to use a tensiometer to determine when to turn the water off and not keep irrigating and moving the fertilizer below the root zone.

There are three basic types of injection systems available: the venturi injection device, a positive-injection pump and tractor type spray tanks.

Types of Materials Used

A user must determine his objective when establishing a fertilizer program. A petiole and soil analysis should be done to determine the type of nitrogen or nutrients required by the vine and the individual application amounts. Seek out a source or supply that has a water-soluble fertilizer.

With this information, a grower and irrigation specialist can choose a fertilizer program as well as a method of injection to get the desired rates of material applied properly.

Using this decision-making process should help develop a successful hillside irrigation system.

(Based on a talk given at the Hillside Vineyard Seminar presented by the Napa County Resource Conservation District, Feb. 10, 1984. For further information, contact Soper at Water Dynamics Inc., 659 Main St., St. Helena, CA 94574 (707) 963-5822.)

Maceration of Cabernet Sauvignon

Recent interest in delayed pressing of red wine has brought attention to several terms which may be abused, and thus robbed of their effectiveness. **Cuvaison**, *a French word, has its origin in the word* **cuve**, *which is a tank or a vat. It refers to the period during which the red must is in the tank prior to pressing.*

Maceration, *an English word, refers to separation of a solid substance into its constituents by soaking in a liquid. To be precise and simple, we could say that a* **cuvaison** *involves a pre-fermentative maceration—generally short, a fermentative maceration, and may or may not include a post-fermentative maceration.*

Recent discussions with Northern California winemakers who use these methods give a perspective on how they can be applied in the New World.

by John McKay, Vichon Winery

Vichon Winery, Oakville, CA, decided from the outset to employ the traditional Bordeaux practice of extended maceration of Cabernet Sauvignon during fermentation. A barrel tasting and winemaking discussion at Chateau Lafite in 1979 between Jean Crété and George Vierra (Vichon General Manager) was adequate proof of the merits of the technique.

This procedure has been integral to Vichon's red wine program and affected winery design, equipment purchasing, and formulation of production methods.

Tannins and colored pigments of red grapes are contained in the skins and seeds. Along with the conversion of sugar to alcohol, extraction of these flavonoid phenolics is the major aim of red wine fermentation. The rate and amount of their extraction is influenced by time, temperature, and alcohol concentration.

Conventional California procedure is to drain red wine fermentations immediately upon achieving desired levels of phenolic constituents as influenced by the above parameters. For premium Cabernet Sauvignon, this means at or near dryness.

To increase the length of the residence period of the wine and pomace beyond completion of alcoholic fermentation is then viewed as a non-traditional procedure, and as such, should be subjected to a close review as to the reasons and results.

Wine tannins range in molecular weight from 500 to 3,000. The higher molecular weight species is a result of condensation polymerization reactions of the smaller molecules. Short-chain low molecular weight tannins are characterized by their bitterness and mild astringency. Long-chain high molecular weight tannins are less bitter, but more astringent.

It then seems desirable to have as much of the larger tannin compounds as possible for youthful palatability, while promoting long-term ageing potential. Duration of the maceration period affects the amount of phenolic substances as well as their composition. As the length of the maceration phase increases, so does the proportion of the desirable high molecular weight tannins from the total phenols present.

Anthocyanins also appear to be greatly affected by the length of maceration. At dryness, Vichon Cabernets exhibit the deep purplish hue and dark intensity typical of very young wines produced from high quality fruit. However, after a 4-5 week maceration, the color shifts toward red, and more closely resembles a one-year-old wine.

Many of the changes that occur during red wine maturation are a result of polymerization reactions of these flavanoids along with their oxidation and precipitation. Extending the maceration period increases the total amount of phenols, and seems to accelerate their development at the same time.

Advantage to the winemaker is production of wines with high phenolic content and ageing potential. However, by virtue of the structure of the phenols, they are not as harsh or bitter as those made by conventional California practice.

Extending the cuvaison requires a significant investment by the winery. Tank capacity must be adequate to handle all the red wine fermentations at one time and keep such tanks tied up for approximately one month. Crushing, generally in mid to late October results in draining and pressing from mid-November to early December.

The fermentation phase need not be modified from normal procedures. We add 20-30 ppm SO_2 at the crusher, ferment at 75- 85 °F, pump-over four times daily and innoculate early-on with malolactic bacteria. Pumping over is continued for a day or two after dryness to decrease the excess CO_2 and to aid in sinking of the cap, which never entirely submerges.

Once pump-overs are discontinued, the tank is hermetically sealed until draining. Daily tastings are conducted to assure that the wines are clean, and to monitor the progress of the phenolic changes. The most notable event is the continued increase in perceived astringency.

After a point, a dramatic decline begins—starting at 2-3 weeks after crush. Duration of the *cuvaison* lasts an average of 35 days (25 days in 1980, 45 days in 1982).

Although extensive chemical analysis has not been routinely performed on the wines during maceration, some common parameters are followed. ML is always complete at press time, the pH does not increase during maceration after completion of ML, and the volatile acidity is typically within the normal range for red wines at pressing: 0.030-0.035 g/100 ml.

Leaving red wines so long in the fermenter without negative side-effects requires clean, sound fruit. Excess dusting sulphur, molds and rot, or spoilage bacteria could curtail or eliminate the technique.

Value of the prolonged maceration procedure is most evident in the finished wines. From observation only, the colors appear remarkably similar in hue and intensity from pressing to bottling. It is felt that the color will continue to be stable for a considerable time in the bottle and probably never throw much sediment.

The structure of the wine is firm while not being coarse.

Long-term ageing potential is greatly enhanced, and yet the wine is not astringently unpalatable in its youth. Time will be the natural test of the wines' ageing ability, but the style of even the young wines after 25 to 35 days in the fermenter is reason enough to continue the practice without hesitation.

by Don Blackburn

Bordeaux is the French region where winemakers most often prolong their *cuvaisons* past the moment of dryness. They taste from each tank regularly, in the hope of pressing at the ideal moment. The notion that astringency undergoes a sudden decrease during maceration is not widely discussed in France, but it has intrigued some of the more attentive winemakers in Bordeaux.

Some Bordeaux winemakers vary their *cuvaison* length quite little from year-to-year. Gaston Vaissiere of Chateau Cheval Blanc and Jean Crété of Chateau Lafite Rothschild generally press 18-20 days after crushing. Jean Paul Gardere of Chateau Latour presses after 20-25 days.

Others in Bordeaux have more varied methods. Henri Lagardere of Chateau La Mission Haut Brion, pressed after one week in 1975, two weeks in '79, three weeks in '78, and four weeks in '76 and '77. Jean Bernard Delmas of Chateau Haut Brion pressed after two weeks in '75, '77, and '79, three weeks in '76, and three-four weeks in '78.

Jean Claude Berrouet, winemaker at Chateau Petrus and the other J.P. Moueix chateaux, is one of the region's most respected enologists. "I leave the wine on the skins for two-three weeks," he says. "In years such as '73 or '78, I wait 20 days. The same thing applied to '76 because its tannins were not aggressive. These are decisions which one makes through daily tastings with the cellar master."

Berrouet finds that as the ***cuvaison*** progresses, there is a transformation of the structure of tannins toward the richer, more pleasant kind. This takes place after 5-12 days. The period of intense aggressiveness can be described as a peak. He found that this peak was not as pronounced in 1982. In 1983, the transformation tended to occur between 8-15 days.

To his knowledge, no one really understands the mechanisms which cause perceived astringency to evolve up and then down. He agrees, though, with those who hypothesize that progressive polymerization of tannins is at the heart of the issue.

Mike Martini, of Louis M. Martini Winery, St. Helena, CA, has been experimenting with prolonged macerations since his 1981 trip to France. In 1983, he used prolonged maceration on 2,000 tons of Cabernet Sauvignon, Merlot, and Pinot Noir. His goal is to "manipulate the phenolic structure as a function of soil and climate."

Martini's findings show that grapes grown in cool climates are richer in low molecular weight phenols, while grapes grown in warm climates are richer in high molecular weight phenols. He feels that what some winemakers consider an increase, followed by a decrease in astringency can better be described as a 'redistribution of phenols'.

He has found that in wines from a cool region, i.e. low molecular weight tannins, this re-arrangement takes place around day 14-15. In wines from warmer regions, a double arrangement occurs: the first around day 12-13, the second around day 18.

Martini does pump-overs until dryness, but not after. He keeps the must at 60°F (jacket setting at 55°F) until 12° Brix, and then turns off the jacket. Temperature usually peaks around 75-85°F. He feels that prolonged macerations substantially eliminate vintage variation.

Robert Pecota, of Robert Pecota Winery, Calistoga, CA, has changed his vinification method of Cabernet Sauvignon over the last several years, because his experimentation led him to what he found to be a better wine.

In 1980, he allowed two weeks of maceration after dryness. He pumped over every other day after reaching -1.5° Brix. He found the resulting wine "very harsh, even the free-run." As a result, pressing was limited to 1/4 atm. "Over time, the wine has softened," he says. "And it is okay after a year in the bottle."

In 1981, he hoped to make a less tannic wine, and used a 'modified Bordeaux method'. It involved seven days of maceration after dryness, with the last pump-over at -1.5° Brix. The two techniques showed little difference. "We had a warmer year in 1981, which caused more harshness in the wine," Pecota says.

In 1983, he tried a 'California method', with emphasis on fruit. Both the '82 and '83 were pressed at 3° Brix. "The young wine has plenty of color," he says. "I wonder if the Bordeaux method might have a significant impact on pH by influencing the acid buffer effect. I prefer low pH's: 3.2-3.3 is ideal, with an 0.85 T.A.

"I look for low pH and high fruit. I analyzed a number of Bordeaux reds, and while their pH's were normal, their T.A.'s were surprisingly low. People say how great the '74 and '78 Napa Cabernet Sauvignons were. But if you taste all the vintages of the '70's, you will find that it is the '73's and '75's which are the most elegant. These were rain-affected harvests, with lower sugar and thus lower alcohol.

Ed Sbragia at Beringer Vineyards, St. Helena, CA since 1976, says Beringer has used some form of ***cuvaison*** on all Cabernet Sauvignons since 1973. His preferred peak fermentation temperature has increased from 70-75°F to the current 85°F. He uses a post-fermentation maceration on 50-60% of the total blend, and generally presses Cabernet after three weeks.

"Phenolic content increases to a certain point, and then decreases," he observes. "This can be attributed to a condensation of tannin and coloring compounds.

"I've seen wines with high total phenols which were soft and drinkable, while others with low phenolics were undrinkable. There is a danger in letting the ***cuvaison*** go too far. There is a point where you've gotten all that you are going to get, after that you may lose something."

Craig Williams of Joseph Phelps Vineyards, St. Helena, CA, noted the tendency of this style wine to fall clear during the extended maceration. He was pleased to find that, at that stage, they tasted substantially cleaner on the palate than wine vinified using more traditional California techniques.

Williams experimented with prolonged maceration for several years, and renewed his investigation of this subject with the '83 harvest. "The tricky part is the analytic determination of results," he says.

"Total phenols doesn't help, because while it reflects the gradual increase in astringency during the ***cuvaison***, it doesn't account for the sudden change within the pool of phenolic compounds. Nevertheless, twice a week I draw two bottles of wine from each tank as lab samples to be analyzed more specifically later on."

Williams stresses the fact that the prolonged maceration method requires extensive tank space, which is unfeasible in many wineries. "But it is an exciting subject of study, especially the way it is being done at Vichon," he says. "The experimentation involves a whole style of wine, and not just a single aspect of production."

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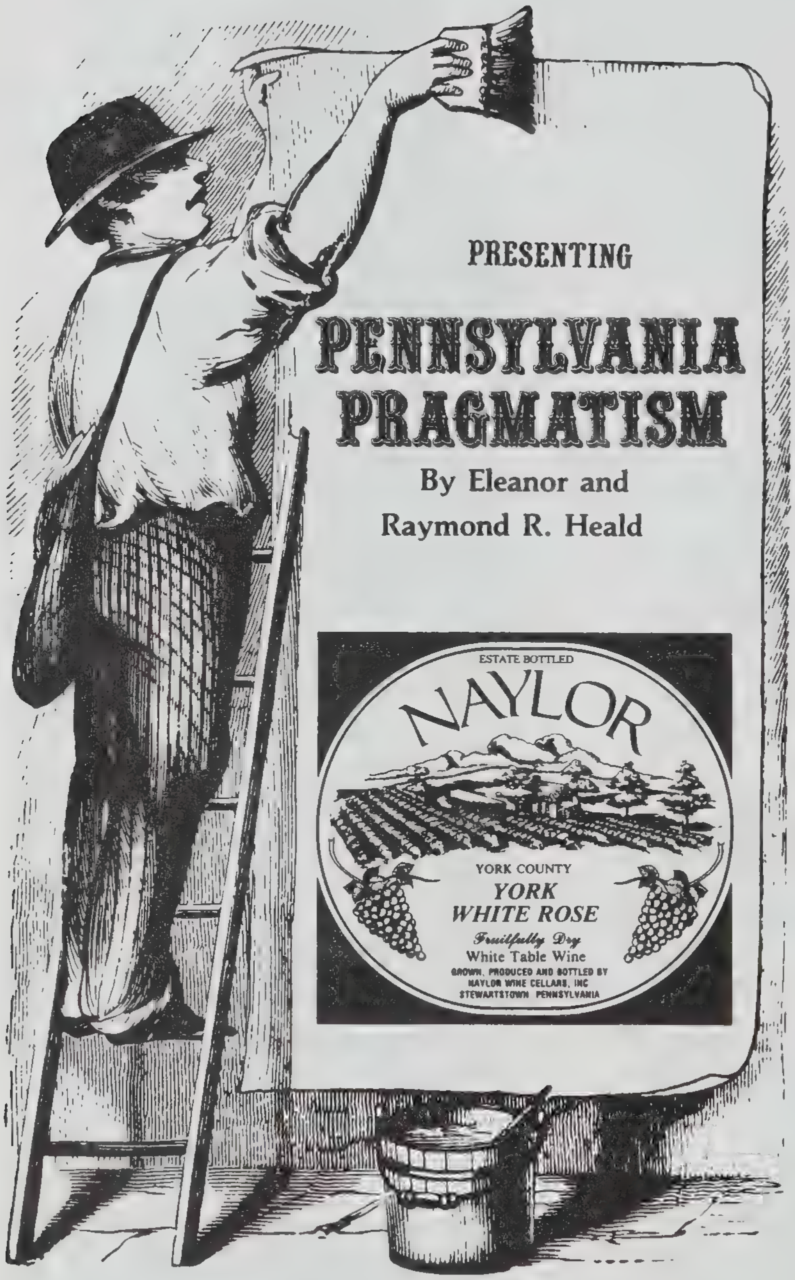

PRESENTING

PENNSYLVANIA PRAGMATISM

By Eleanor and Raymond R. Heald

How can a 10,000 case winery keep its head above water in times of low wine prices, high competition, and surpluses from the foreign market?

Pennsylvania's Dick Naylor and wife Audrey own such a winery and sell all of their wine within a 100 mile radius. You may not have heard of Naylor Wine Cellars, Inc. (NWC), in York County, Pennsylvania but residents know them well and buy NWC wines.

Naylor has worked as a tool-and-die maker, methods engineer, packaging engineer, sales engineer and corporate executive vice-president. Since 1981, he has served as Chairman of the Board for Cor-Box Inc., a packaging corporation, and handles sales for about 25 of the company's major accounts.

A client who made wine at home, from a kit purchased at Sears Roebuck Co., invited Naylor to taste his wine. Naylor caught the wine bug.

Naylor's first effort was a five-gallon batch of Dandelion wine in the spring of 1966. Summer fruit wines followed, from plums, cherries, strawberries, and a 52-gallon barrel of apple wine. He purchased some Concord and Niagara grapes that fall, and to improve his winemaking knowledge, began to read, attend classes and horticultural meetings conducted by Penn State University (PSU).

In 1967, Naylor and a friend had an opportunity to care for a three-acre Labrusca vineyard in very poor condition, with the promise that they could have all of the fruit. Accepting the challenge to bring the vineyard back to health, he learned proper viticultural techniques, and made use of his farm upbringing.

In 1968, he planted 20 French hybrids in his backyard and added a new variety each year. By 1972, he had 120 producing vines and made wines from DeChaunac, Vidal and Seyval grapes.

In 1974, Naylor purchased a 52-acre farm near Stewartstown, PA. Originally a real estate investment, the site proved to be ideal for growing grapes. Loan terms were $35,000 down and $5,000 plus interest every six months for seven years; at times Naylor could pay only half the amount due. Final payment was in August, 1983.

The farm, at 1,000 foot elevation, has 8-15% southeast slopes, a deep Chester loam soil, and good air drainage—helpful during late spring frosts. "It was a lucky happenstance that brought me to buy this particular farm," Naylor recalls. "Quality of fruit and yield/acre in southern Pennsylvania is excellent. For instance, I can harvest 10 tons/acre of Niagara with outstanding varietal character."

In 1975, Naylor and friend, Bob Eisenhart, planted 1.25 acres of French hybrid. In 1976, they put in an additional 2.5 acres of vines recommended by Dr. Haeseler of PSU and Philip Wagner of Boordy Vineyards, MD. Included were Seyval, Baco Noir, Foch, DeChaunac, Fredonia, Worden, and Muscat. Naylor bought out Eisenhart and added 0.75 acre of DeChaunac in 1977.

A major planting program in 1978 included 1/2 acre of Vidal and over two acres of vinifera: Cabernet Sauvignon, Riesling and Gewurztraminer. Some cuttings were purchased from PSU, but most came from Hermann Weimer's nursery in the Finger Lakes region of New York state.

Naylor decided to use the umbrella Kniffin trellising system for most varieties, and high cordon for DeChaunac. Rows were planted 9-10 feet apart with vines planted 6-8 feet distance, depending upon growing conformation.

At the York Interstate Fair amateur wine competition, his wines took the grand champion award three years. In the 1977 American Wine Society amateur competition, Naylor's wines won three first prizes and best estate-bottled. The awards gave him confidence to really think seriously about starting a winery.

The Naylors converted a 1,100 sq. ft. potato cellar, using old milk tanks and used equipment to keep initial investment low. Equipment included a stemmer-crusher and an old basket press for small batches. Between 1978 and 1981, grapes were crushed at NWC and most pressing was carried out at a nearby fruit farm with a bladder press for apple cider production.

Early ripening varieties were put in cold storage until the license arrived during the 1978 harvest, and 1,600 Gallons of 11 wines were made.

In the early years, Naylor paid some of his help with NWC stock, rather than cash. Son-in-law and cellarmaster Ted Potter, and Robert Byloff, co-winemaker/enologist, hold 7% of NWC stock. The Naylors hold the remainder.

A Naylor joint partnership owns the farm and vineyards, and the equipment and buildings are leased to the winery at a rate to pay the monthly banknote. The partnership handles grown and purchased grapes, and sells all fruit to the winery. This arrangement was established to best utilize tax laws.

Now NWC has one full-time employee, Mike Beckmeyer, vineyard manager for three years. He participates in all facets of winery operation depending upon need and time of year.

Byloff has been a part-time employee since November, 1978, and is president of an electronics firm and owner of Winery Services, a wine consulting/analysis service. He does laboratory work for ten York area wineries and spends an average of 50 hours/month at NWC.

During harvest, 2-7 local housewives are hired to pick grapes. Potter works weekends and Naylor anticipates need of another full-time winemaking employee in 1984. Audrey Naylor does everything from selling wine in the tasting room to driving the tractor to mowing the vineyard.

Naylor designed a new winery, a 66 X 126 foot pole building which cost $73,000. 2/3 has a double steel wall with R19 insulation, housing all storage, ageing and bottling facilities, plus the sales/tasting room.

Present storage capacity is 22-24,000 Gallons of stainless steel tanks, with mostly American bluegrass oak barrels and a few French Limousin barrels. Future storage goal is 50,000. All dry red wines, Chardonnay and Cayuga receive some barrel ageing along with half of the Seyval lot.

The uninsulated single steel shell portion of the building is used for crushing and pressing. Grading, cement flooring, septic system, cinder block work, and a parking lot raised the cost to $130,000. Equipment purchases, including a $50,000 refrigeration system, totalled $200,000.

Financing was possible because of Naylor's other full-time job and a straight demand bank note with a fluctuating interest rate of 1% over prime. NWC, like many wineries, may have difficulty meeting this obligation in January and February, when sales are slow. "I don't expect to get rich," Naylor says, "but I want to make a decent living and enjoy what I am doing."

As the first major winegrower of French hybrids and vinifera in York County, PA, Naylor has experimented with 45-50 different grape varieties.

In 1983, Chambourcin, Chardonnay, and Riesling were planted in a close inter-row spacing of 4-5 feet, to limit the crop/vine but maintain the yield/acre. Naylor hopes this will give greater fruit intensity to the wines.

Naylor has 24 acres planted to grapes in 1984; 19 are producing. Wines are produced from 80% estate grapes and 20% purchased grapes. 85 tons were crushed in 1982, followed by 120 tons in 1983 and 170 tons are planned for the 1984 crush. Purchased grapes must be grown in Pennsylvania according to state law.

NWC harvest begins around August 12 when Concord, Fredonia, Himrod, Interlaken, and Niagara are picked and sold as table grapes. 3-4 tons are sold at $.50/lb, an immediate

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AUDREY and DICK NAYLOR

cash-flow income of $3,000-4,000. Harvest continues to about October 20, when Vidal is picked before the first killing frost.

"I do not feel Vinifera is important to the eastern wine industry's future success," Naylor says. "And, I plan to increase plantings of my top four: Vidal, Seyval, Chambourcin and Niagara."

"Vinifera wines are not going to keep anybody in business, because you can't make any money with them. They may provide a little interest for some people, but we need to produce the wines we make and sell best. Wines from French-American varietals and some Labrusca types allow us to sell a wine for $4-5/bottle.

"Why would our customers buy a $7 bottle of Riesling, if they like a $5 Niagara just as well? Problems with growing Vinifera grape varieties don't allow us to sell the wines at a price that most of our customers are willing to pay."

Nouveau Aurore, a new NWC wine increasing in popularity, is a cash-flow wine. It is ready to harvest around August 25, and is bottled in time for the NWC Harvest Festival, first weekend in October. "It is nice to have some money coming back only six weeks after harvest," Naylor says. "Aurore's difficulty is a tendency to develop black rot."

Naylor is pleased with the red wine from Chambourcin. About 5-10% Cabernet Sauvignon was added by accident in 1981. But the blend was so well-liked, that ever since Chambourcin has included 5-10% Cabernet plus 30% Cabernet stems for added tannin. Stem addition worked so well with Chambourcin, that Landal is now fermented with stems added back.

Although NWC produces eight times more white wine than red, Naylor sees an increasing potential for producing good red wines. Production of red varieties is limited to Chambourcin and Landal. Small lots of Cabernet Sauvignon produced at NWC and at a neighboring winery in southern Pennsylvania have been well received. Other red varieties are used only in rose wines. DeChaunac and Leon Millot should not be used to produce a dry red wine in Naylor's opinion.

Fruit wine is a big NWC item. 3,000 Gallons of apple, strawberry, raspberry and plum are produced annually. "Our fruit wine customers won't allow us to stop producing," Naylor says. "Fruit wines are easy to make, an excellent cash-flow item, and they do not interfere with the grape harvest."

Apple and plum were the first NWC fruit wines produced in 1979 and 1980 production increased to 500 Gallons of apple and 150 Gallons of plum. "Apple wine is a 'snowball' to make," says Naylor. "We call it Apfelwein, in the German tradition. A hint of the German herb, Waldmeister or Woodruff is added for a subtle spiciness to purchased juice.

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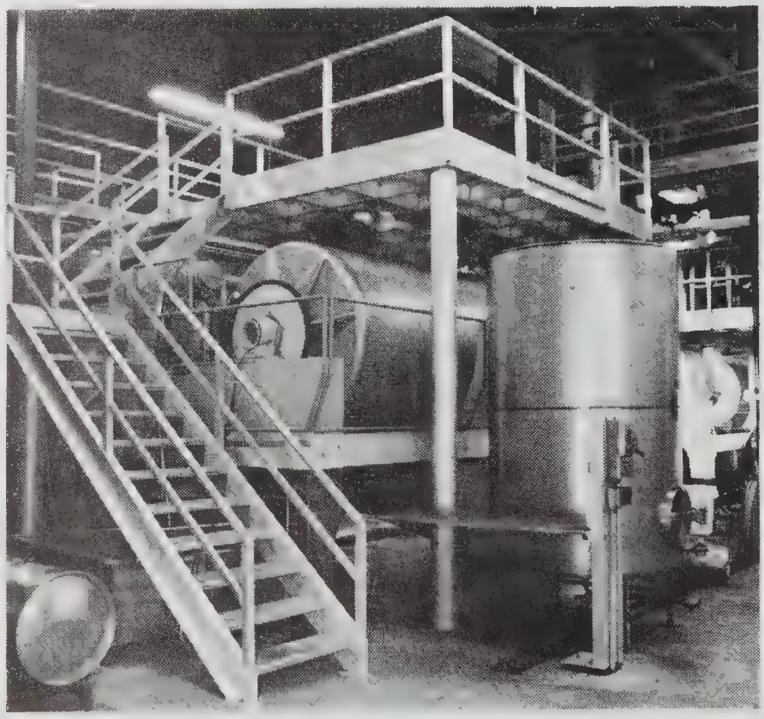

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"Satsuma plum, with its yellow flesh and red skin, produces a beautiful blush of color, in a bottling that has become a holiday "Sugar Plum' wine, complete with Santa Claus and Christmas trees on the label." 1983's Sugar Plum sold out at $5.85/bottle and free tasting of the wine at the winery was discontinued.

Fragola (strawberry in Italian) is made in June and ready for sale by Thanksgiving. Raspberry wine, marketed as Framboise, is harvested in summer and also ready for sale by Thanksgiving. Newest NWC fruit wine is cherry, first produced in 1983, and called Kirse.

Naylor notes the vinification challenges of stone-fruit wine production as little specialized equipment is available to remove stones from fruits like plums and cherries. Stones can puncture the press bladder, therefore fruit must be crushed and pressed by hand.

Considerable pulp makes juice cloudy. Naylor experimented, using an old basket press with rice hulls to press plums. "Low and behold, it worked pretty well," he recalls. "Pulp stayed in the press allowing a good flow of clear juice. When we tried cherries, it worked just as well!"

Naylor recommends fining fruit wines with Sparkalloid, rather than bentonite because of differences in the charge on fruit proteins. Plum wine with a very high acidity range about 1.6% is reduced with potassium carbonate to 0.8-0.9% TA. "NWC fruit wines are not overly sugared," Naylor says. "Our goal is to produce a sweetness that tastes just like eating fresh fruit."

NWC uses a number of proprietary names for their wines believing that if a consumer tastes a poorly made varietal, they might assume that all wines of that varietal are poor.

"Local people who identify with our wines, will buy our Seyval if it is sold with a name that they identify only with NWC," responds Naylor. "Our 'York White Rose' is 80% Seyval. Yes, there is some confusion about the use of White Rose when people associate the name with generic rose. York comes from York County."

NWC's Grenadier label was created during the 1978 harvest. After a long day, the crew began lobbing bunches of Niagara grapes into the crusher, as though they were hand grenades. They fantasized about what a 'dynamite' label they would have with a World War I soldier, coming out of the trenches with a bunch of Niagara grapes in his hand. With a local artist's help – and many trips to BATF in Washington, DC – the Grenadier label was created.

Golden Grenadier is a secondary label put on several NWC white or golden wines, including Apfelwein. Golden is replaced by Ruby to identify red and rose wines like Catawba and Concord. Customer's amusement has encouraged Naylor to continue this theme with fruit wines.

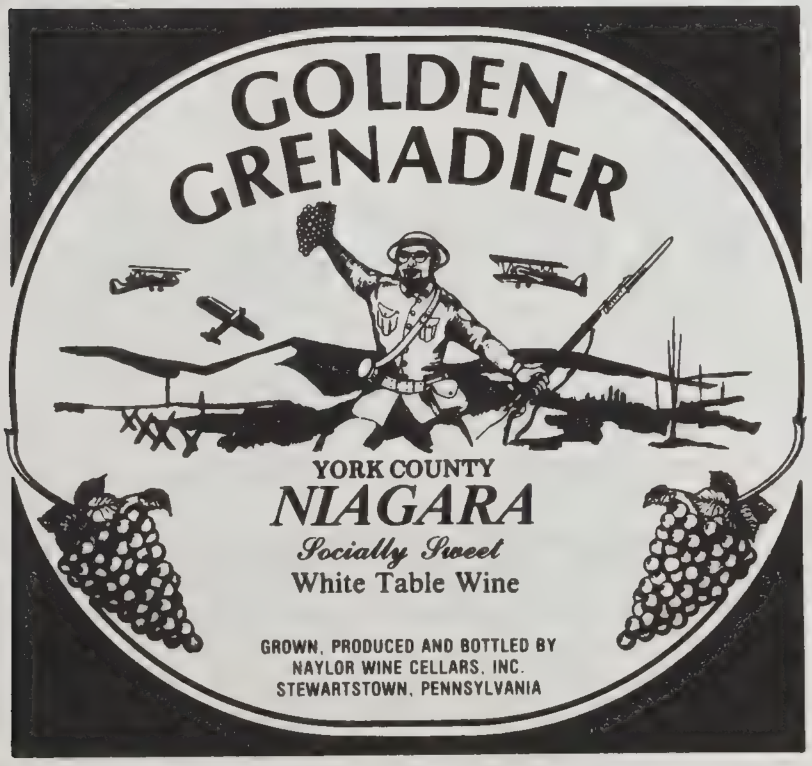
Naylor prefers the NWC dry Vidal, but it does not sell very well. Niagara sells best, it is finished with 5.5% RS and tastes just like eating fresh grapes. Each year, 4,000 Gallons of Niagara are produced and sold by the following Thanksgiving.

One major reason for NWC's success is Naylor's talent as a salesman. Frequently working in the tasting room, he pays close attention to customer preferences and then blends wines to their taste.

85% of NWC wine is sold at the winery, the tasting room receives about 60-80 customers on the weekend and ten customers/weekday. Average purchase is three bottles/customer, and many customers return to purchase wines in larger quantities.

Two special events are held each year – a spring festival, the first weekend in June, and a harvest festival, the first weekend in October. Picnic facilities are convenient to the winery. Tours, tasting, local food specialties, and music are provided.

Dick Naylor is both a realist and a pragmatist. NWC has grown to 10,000 cases/year during the industry's flat growth period of 1982-83. Naylor controls his own fate in the vineyards, and then makes wine that his customers enjoy and can afford to drink on a regular basis.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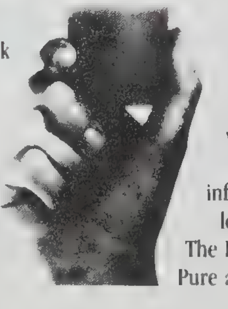

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California Inspection of Harvested Grapes

In Sacramento, CA on January 11, 1984, Assembly Bill 1440 was dropped. AB 1440, sponsored by Assemblyman Sam Farr of Monterey and Jack O'Connell of Santa Barbara, was to amend existing legislation to broaden third party inspection of grapes at harvest. The Bill arose out of the 1982 crush where, because of alleged stringent application of quality-standards, a significant amount of grapes were downgraded or rejected by wineries.

The subjective nature of the quality criteria (ambering, stress, raisining) used in conjunction with the huge bumper crop and the related capacity problems of the wineries, led to some feelings that quality-standard procedures were being used to circumvent contract commitments.

As a result, a movement by growers arose to reduce subjective and seemingly arbitrary quality-standard determinations. This reform concept was embodied in proposed legislation introduced on March 3, 1983.

AB 1440 could have been considered as an intervention in what would normally be the subject of private negotiation and contractual arrangements between buyers and sellers. The legislation was aimed at the weakness, not in the normal rule of *Caveat Emptor*, but the seldom-considered reverse side, *Caveat Vendor*.

Grape-growers were apparently in need of some remedy for contract improvements in areas where their negotiations had left them vulnerable. Intrusion into this area of private contracts was justified by the legislative preamble:

'The production and marketing of grapes for crushing into wine produced in this state is hereby declared to be a business affected with a public interest. Provisions of this chapter are enacted in the exercise of the police powers of this state for the purpose of protecting the health and welfare of the people of the state.'

Whatever the justification, the economic plight of the grape-growers caused a bellow for governmental redress of the apparent ability of wineries to take advantage. Whether the wineries had abused power or whether the growers deserved relief became background issues to a political struggle of unusual dimensions and interest.

AB 1440 in its last form provided for several significant changes to grape-quality standards as they relate to the purchase price and rejection of grapes by wineries.

One of the most significant concepts proposed was for the grape-growers to be advised in writing by May 1 of each harvest year of the specifics of all quality-standards to be imposed. Existing practice is for growers to be advised in writing of standards only for soluble solids, rot and foreign materials prior to delivery.

AB 1440 was to extend third party inspection to any quality condition with measurable criteria rather than for only soluble solids, rot and foreign materials. Where other quality conditions are not measurable and have an effect on price or rejection, the buyer would have to provide a written statement at time of delivery which specifies any quality-standard involved and how the purchase price or rejection is affected.

The Wine Grape Inspection Advisory Board Committee

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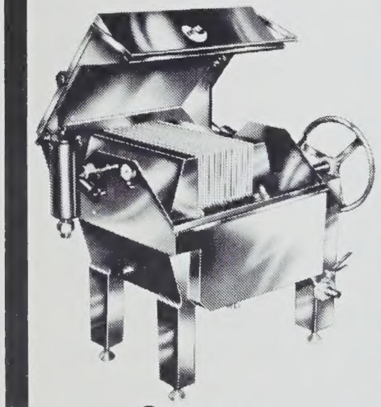

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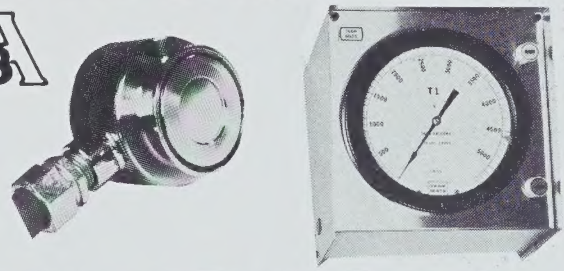

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was also to be recomposed from just 8 vintner-members so as to add 8 grower-members and one member representing the public interest. The committee remains advisory to the Director of Food and Agriculture.

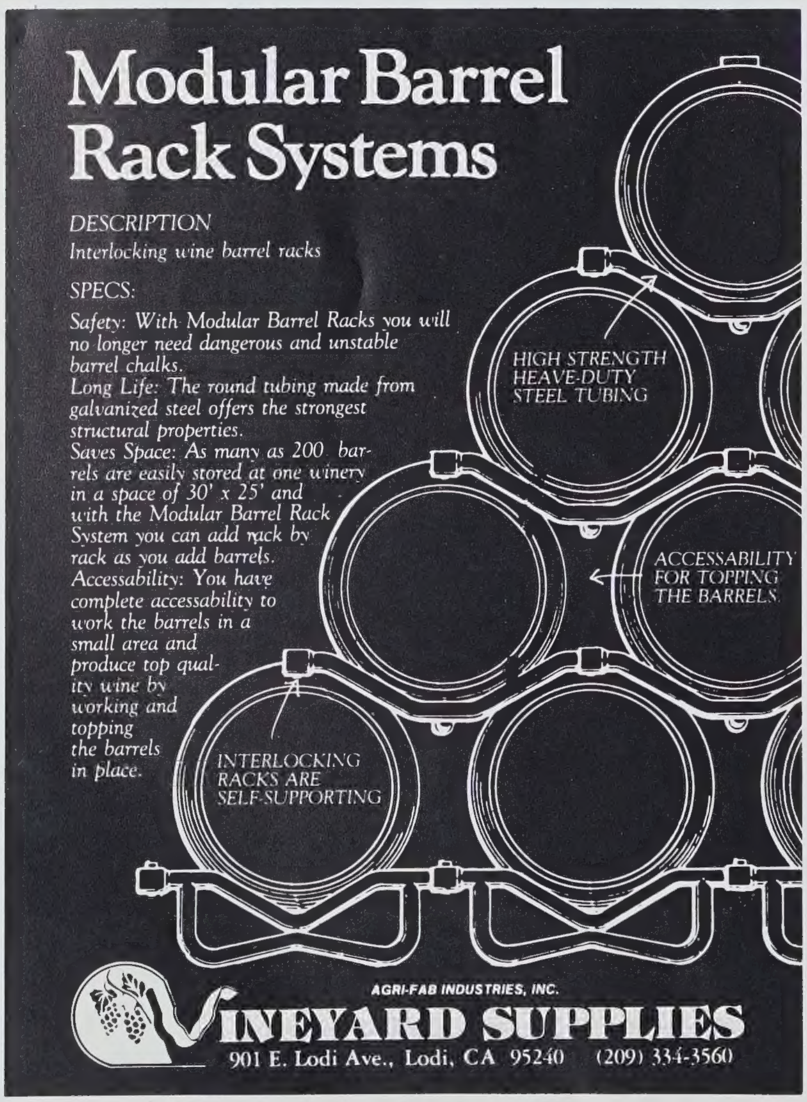
The Committee's primary goal was to develop measurable procedures for all quality-standards affecting price or rejection. By January 1, 1985, a procedural guideline and timetable was to be adopted and beginning January 1, 1986, a status report issued annually to the Legislature.

AB 1440 provided for a unique procedure by which persons desiring development of new objective grading criteria could request it from the Director of Food and Agriculture. The director, based on his determination of industry-wide demand and need, could then authorize a fee not to exceed \$.05/ton to cover the cost of developing and implementing the criteria.

Under leadership of the Wine Institute, opposition to AB 1440 was organized. Without offering much in terms of new constructive alternatives, the Institute campaigned against the proposed legislation as being unnecessary, ambiguous, and an interference in pure, private contractual affairs by government. Wineries tend to view quality-standards as being primarily the determination of the winemaker. This obstacle, plus the reluctance to change a flexible situation, contributed to the contrary attitude of the wineries.

Much to the wineries' surprise, the awkward situation arose of having the United Farm Workers Union join the Institute in opposing the grower-backed AB 1440. This strange alliance occurred after the California Farm Bureau Federation reportedly refused to discuss a possible compromise with the UFW on some unrelated farm labor bills.

The lower than expected 1983 harvest also contributed to making any new proposed quality-standards, at least temporarily, a mute question. With waning support, even among growers, AB 1440 was dropped from the legislative file.



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A far less encompassing bill, SB 1192, authored by Senator Rose Ann Vuich and Assemblyman Farr experienced essentially no opposition and was signed into law by Governor George Deukmejian on Sept. 12, 1983.

This legislation provides for equal grower participation in the Wine Grape Inspection Advisory Committee. The primary goal of the committee is to recommend to the Director of Food and Agriculture objective criteria and inspection procedures for all quality conditions.

As with AB 1440, SB 1192 provides for 1/2 of the third party inspection fees to be paid by both the purchasers and sellers of the grapes, versus the current entire payment by the wineries. Although offering no specific relief to the growers in the form of mandated quality criteria or improved third party inspection, the new law does provide a balanced forum for the discussion of such problems.

Although the turmoil has seemingly ended, the next bumper crop is likely to revive this issue. Undoubtedly, experiences of the past few years will have some impact on the relationship of growers and vintners. Some possible long-term developments are as follows:

1) More meaningful and complex quality-standards for grapes will evolve. Soluble solid criteria will be augmented certainly by acid and pH measures and potentially by minimum acceptable levels of volatile acid, sulphur and other chemical compounds.

2) Determination of quality-standards may move away from the sugar shack into both the vineyards and winery laboratory. Field acceptance of grapes may be adopted in certain situations. Post-crush tasting and analysis of wines with correlation to records of previous harvests may involve growers as well as winery staff.

3) Wineries may attempt to require approval of viticultural plans particularly as they relate to pruning, spraying and irrigation.

4) Wineries may negotiate the right to determine time of picking.

5) Pricing graduations for vineyard location similar to the practice in the Champagne area of France may arise. This, in combination with winery involvement in viticultural decision-making, may be a prelude to vineyard-pricing rather than per ton pricing of grapes.

Despite the waning of this controversy, the wineries ought to review their posture and attitude. It would do well to take some progressive steps in mending some of the fences broken during the storm. Not only is it risking alienating an important group which is closely akin, but it may also be a bit myopic.

With limited growth predestined by the planting of the past few years, it is conceivable that a resurgence in wine demand could bring about grape shortages, particularly for wine grapes. Grower contracts which expire over the next few years may involve very difficult negotiations. Having clearly heard the argument concerning legislative intervention in private agreements, growers in a sellers' market may attempt to write much more specific quality-criteria into new or expiring contracts. Early anticipation of such a contingency, particularly as it relates to the sensitive area of quality-standards, might well be a prudent step.

George M. Schofield

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